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GENERAL DESIGN MEMORANDUM

GULFPORT HARBOR

MISSISSIPPI

DESIGN MEMORANDUM NO. 1

MAIN REPORT



**US Army Corps
of Engineers**
Mobile District

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report consists of an economic, engineering and environmental reanalysis of the proposed modifications to the existing Federal project for commercial navigation at Gulfport Harbor, Mississippi. Supplementing this report are the following Appendixes: Appendix A-Economic Analysis, Appendix B-Hydrodynamics, Appendix C-Geotechnical Report, Appendix D-Environmental Documentation, and Appendix E-Thin-Layer Disposal. The Environmental Impact Statement is bound as a separate document report No. COESAM-PDFC-89/09 and is being filed with the Environmental Protection Agency concurrently with this GDM.		

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MAIN REPORT



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SYLLABUS

Gulfport Harbor, Mississippi, is located in Harrison County on Mississippi Sound about equidistant (80 miles) from New Orleans, Louisiana, and Mobile, Alabama. The Federal project serving the Port of Gulfport is 32 feet deep by 300 feet wide and about 8 miles long across Ship Island Bar, 30 feet deep by 220 feet wide and about 11 miles long through Mississippi Sound, to a turning basin at Gulfport that is 30 feet deep by 1,320 feet wide and 2,640 feet long. The project also includes a 26 acre commercial small boat harbor with an entrance channel 8 feet deep by 100 feet wide and 4,300 feet long.

Improvements to the existing Federal project at Gulfport Harbor, Mississippi, were authorized by the Supplemental Appropriations Act of Fiscal Year 1985 (PL 99-88 dated 15 August 1985). This Act was modified by the Water Resources Development Act (WRDA) of 1986 (PL 99-662 dated 17 November 1986), and further modified by the Water Resources Development Act of 1988 (PL 100-676 dated 17 November 1988). The authorization in the WRDA of 1986 provides for construction and maintenance of a project 36 feet deep by 300 feet wide in Mississippi Sound, 38 feet deep by 400 feet wide through Ship Island Bar, relocation of the Ship Island Bar channel 1,000 feet west of the present channel alignment with appropriate bend widening at each end, and a littoral drift impoundment basin 38 feet deep by 300 feet wide by 2,000 feet long opposite the western tip of Ship Island. *gld*

The authorization of improvements in the Water Resources Development Act of 1986 (WRDA 86) states:

The project for navigation, Gulfport Harbor, Mississippi: Report of the Chief of Engineers, House Document Numbered 96-18, at a total cost of \$81,700,000, with an estimated first Federal cost of \$61,100,000 and an estimated first non-Federal cost of \$20,600,000; except that for reasons of environmental quality, dredged material from such project shall be disposed of in open water in the Gulf of Mexico in accordance with all provisions of federal law. For the purpose of economic evaluation of this project the benefits from such open water disposal shall be deemed to be at least equal to the costs of such disposal.

Accordingly, in addition to the traditional benefits attributable to this project, the benefits for disposal of the dredged material in the Gulf of Mexico are also evaluated.

The modifications contained in the WRDA of 1988 authorized the development of a demonstration program to implement a thin-layer demonstration test; disposal of dredged material from construction, operation, and maintenance of the project in Mississippi Sound under the thin-layer demonstration program; use of dredged material as fill in connection with a pier extension project by the Mississippi State Port Authority at Gulfport, and cost sharing as specified in the WRDA of 1986, except monitoring costs for the thin-layer demonstration test are not to be included in the benefit-to-cost ratio for the project.

The feasibility report on Gulfport Harbor, Mississippi, transmitted to Congress in 1978, recommended solutions to the navigation problems experienced by large commercial vessels using the port. These problems, which include light-loading of vessels, induce diseconomies and result in increased costs and time delays. The feasibility report, however, did not recommend an option for disposal of the dredged material. This General Design Memorandum (GDM), therefore, contains reformulation investigations of both the disposal options and the economic and environmental impacts associated with disposal of the dredged material which would result from the project improvement.

Evaluation of 40 alternative plans of improvement, encompassing a wide array of channel widths, depths, and alignments was accomplished during plan reformulation in this GDM. Careful screening and analysis of the alternative plans found that the National Economic Development (NED) plan would be a project configuration consisting of a channel segment 36 feet deep by 220 feet wide in Mississippi Sound, 38 feet deep by 300 feet wide in Ship Island Pass (relocated 1,900 feet west of the present channel alignment), and 38 feet deep by 300 feet wide in the Gulf of Mexico. This NED plan also includes a 2,640-foot long turning basin constructed to a 32-foot depth and a 1,110-foot width at the northern end, and a 36-foot depth and a 1,120-foot width on the southern end. The NED plan is supported by the local sponsor, local interests, and complies with all formulation requirements of the Water Resources Council's Planning Principles and Guidelines for Water and Related Land Resources Implementation Studies. Accordingly, this plan is recommended as the plan of improvement for the existing Federal navigation project at Gulfport Harbor, Mississippi.

New work dredged material from the recommended (NED) plan totals 14,496,500 cubic yards. Of this quantity, 1 million cubic yards will be thin-layered in Mississippi Sound, 2,589,700 cubic yards will be placed in the littoral zone near Cat Island, and the remainder will be taken to the Gulf of Mexico. Annual incremental maintenance material from this project improvement would total 788,000 cubic yards. Of this amount 299,700 cubic yards will be thin-layered in Mississippi Sound, 190,200 cubic yards will be placed in the littoral zone near Cat Island, and the remaining 278,100 cubic yards will be placed in approved disposal sites in the Gulf of Mexico.

The total first cost of the recommended (NED) plan is estimated to be \$41,538,100 (October 1989 price level and 8 7/8 percent interest rate). Of this total, the Federal first cost is estimated to be \$26,915,400 for construction of the general navigation features. The non-Federal first cost is estimated to be \$14,622,700, which includes the local share of the general navigation features, dredging the berthing areas, wharf stabilization, and relocation of a crude oil pipeline. The total annual economic costs of the recommended plan are estimated to be \$4,528,000. The average annual equivalent benefits, at an interest rate of 8 7/8 percent, are estimated to be \$4,936,900, yielding a benefit-to-cost ratio of 1.09 to 1. The WRDA of 1988, PL 100-676, stipulates that the monitoring costs for the thin-layer demonstration are not to be included in the computation of the benefit-to-cost ratio. When the additional benefits for transporting the dredged material to the Gulf of Mexico are added to the National Economic Development Account, in accordance with the wording of the WRDA 86, PL 99-662, the benefit-to-cost ratio becomes 1.51 to 1.

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Exhibit B - Correspondence, U.S. Coast Guard

Exhibit C - Project Cost Appendix

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INTRODUCTION

1. Gulfport Harbor is located in Harrison County, Mississippi, on Mississippi Sound about equidistant (80 miles) from New Orleans, Louisiana, and Mobile, Alabama, see Figure 1. The Committee on Public Works of the U.S. Senate adopted a resolution on 23 September 1965 requesting that the Board of Engineers for Rivers and Harbors determine the advisability of modifying Gulfport Harbor. Further, Section 304 of the River and Harbor Act of 27 October 1965 authorized and directed the Secretary of the Army to initiate survey studies to examine the feasibility of modifying the Federal navigation channel at Gulfport Harbor, Mississippi, to accommodate present and prospective commerce. A feasibility study and report was completed in 1976 which recommended improving the ship channel to 36 by 300 feet in Mississippi Sound and 38 by 400 feet in the Gulf of Mexico, with other related improvements. The feasibility report was reviewed by the Chief of Engineers and furnished to the Assistant Secretary of the Army for Civil Works in January 1978. The report was transmitted to Congress on November 28, 1978.

2. The studies documented in the 1976 feasibility report were adequate to determine the need and economic justification for modification of the Federal navigation project at Gulfport. The feasibility report, however, did not recommend a method of disposal of dredged material. Detailed investigations of disposal options and the associated economic and environmental impacts were to be accomplished in a General Design Memorandum (GDM).

3. The project for Gulfport Harbor was authorized by the Supplemental Appropriations Act, 1985 (P.L. 99-88), and Continuation of Planning and Engineering funds were allocated in FY 1985 to initiate preparation of a GDM. These funds were used to begin investigations and testing of the suitability of new work material at Gulfport Harbor for placement in Mississippi Sound using thin-layer disposal techniques, and for placement in designated ocean disposal sites in the Gulf of Mexico. The reformulation investigations were initiated after passage of the Water Resources Development Act (WRDA) of 1986 and includes the mandates contained in the WRDA of 1988. This GDM culminates the reformulation studies and presents detailed engineering, economic, and environmental data supporting construction of an increment of the authorized project. This report presents a description and design of project features; construction

procedures; economic evaluations; benefit summary; real estate requirements; cost estimates; design and construction schedule; and operation and maintenance requirements for the authorized navigation improvement.

4. Existing Federal Project - The existing Federal project at Gulfport provides for a channel 32 feet deep by 300 feet wide and about 8 miles long from the Gulf of Mexico to just north of Ship Island Pass, a channel 30 feet deep by 220 feet wide and about 11 miles long through Mississippi Sound, then connecting to a 30 feet deep turning basin at Gulfport that is 1,320 feet wide and 2,640 feet long. The project also includes a 26 acre commercial small boat harbor with an entrance channel 8 feet deep by 100 feet wide and 4,300 feet long. The existing project was adopted by the River and Harbor Act approved 3 July 1930 (House Document Number 692, 69th Congress, 2nd session), and the River and Harbor Act approved 30 June 1948 (House Document Number 112, 81st Congress, 1st session). Construction of the existing Federal project commenced in 1932, and was completed in 1950. The River and Harbor Act approved 3 July 1958 (Senate Document Number 123, 84th Congress, 2nd session) adopted the small boat harbor as part of the existing Federal project.

5. Authorization - Improvements to the existing Federal project at Gulfport Harbor were authorized by the Supplemental Appropriations Act, 1985 (P.L. 99-88) which was approved on August 15, 1985, modified by the WRDA of 1986 (P.L. 99-662), which was approved on November 17, 1986, and further modified by the WRDA of 1988 (P.L. 100-676), which was approved on November 17, 1988.

6. The authorized improvements in the WRDA of 1986 states:

The project for navigation, Gulfport Harbor, Mississippi: Report of the Chief of Engineers, House Document Numbered 96-18, at a total cost of 81,700,000, with an estimated first Federal cost of \$61,100,000 and an estimated first non-Federal cost of 20,600,000; except that for reasons of environmental quality, dredged material from such project shall be disposed of in open water in the Gulf of Mexico in accordance with all provisions of Federal law. For the purpose of economic evaluation of this project the benefits from such open water disposal shall be deemed to be at least equal to the costs of such disposal.

7. Authorized Improvements - The improvements authorized by the WRDA of 1986 consists of the following:

a. Deepen and widen the existing ship channel from 30 feet deep by 220 feet wide to 36 feet deep by 300 feet wide in Mississippi Sound.

b. Deepen and widen the bar channel from 32 feet deep by 300 feet wide to 38 feet deep by 400 feet wide, all along the present channel alignment.

c. Relocate the Ship Island Pass channel segment, with dimensions of 38 feet deep by 400 feet wide, about 1,000 feet to the west, with appropriate bend widening at each end.

d. Construction of a littoral drift impoundment basin 38 feet deep by 300 feet wide by 2,000 feet long opposite the western tip of Ship Island.

e. Modify the turning basin from 30 feet deep by 1,320 feet wide by 2,640 feet long to 36 feet deep by 1,120 feet wide by 2,640 feet long, and enlarge the entrance to the basin from a point 2,300 feet south of the southeast corner and along an angle of about 45 degrees. Dredged material from the project was specified to be placed in the Gulf of Mexico by the WRDA of 1986. Figure 2 displays both the existing and authorized dimensions for this project.

8. The modifications in the WRDA of 1988 authorized:

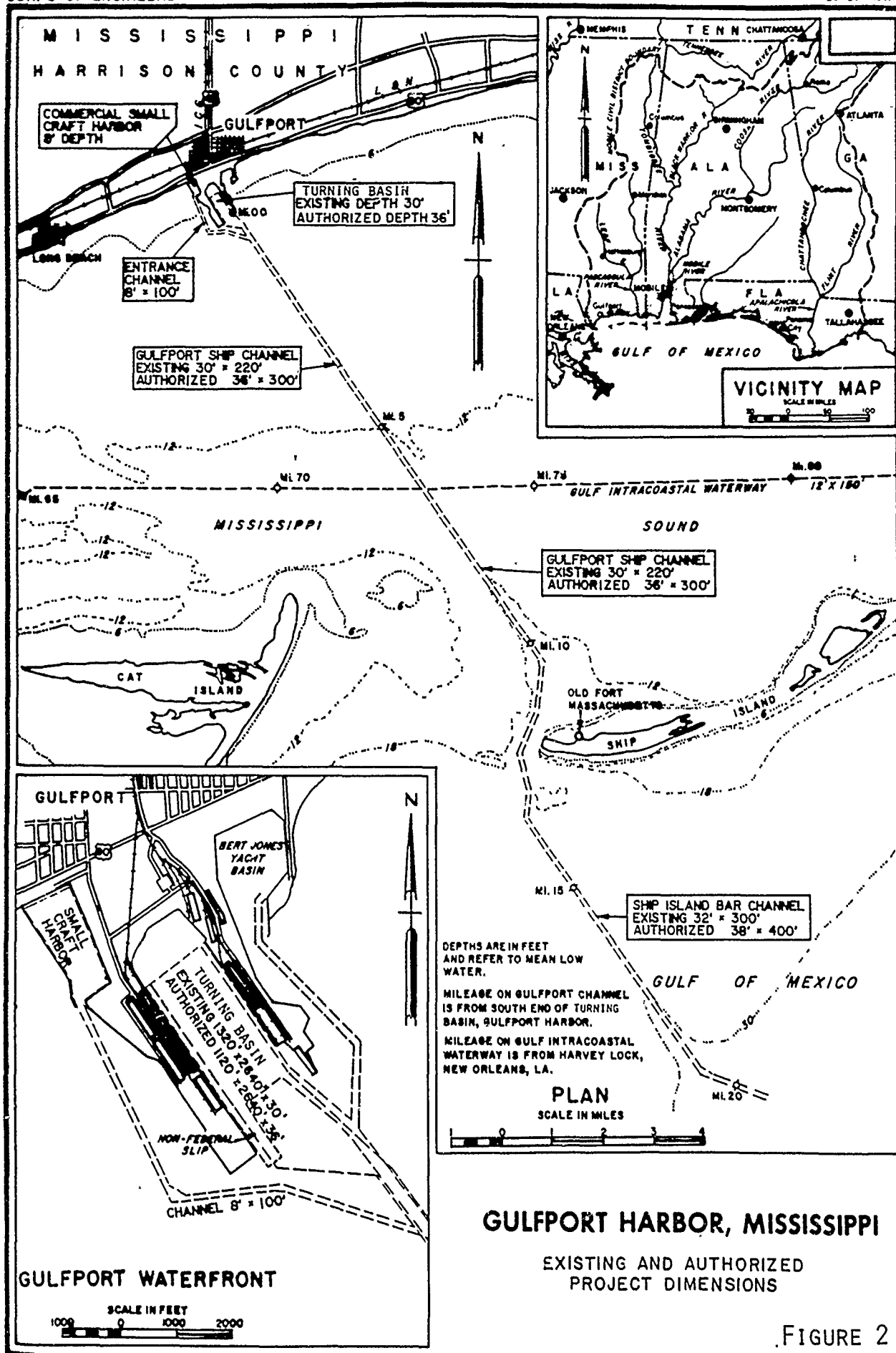
a. Development of a program to implement a thin-layer demonstration test.

b. Disposal of dredged material from construction, operation, and maintenance of the project in Mississippi Sound under a thin-layer demonstration program.

c. Use of dredged material as fill in connection with a pier extension project by Gulfport Harbor.

d. Cost sharing as specified in the WRDA of 1986, except monitoring costs for the thin-layer demonstration test are not to be included in the benefit-to-cost ratio of the project.

9. General - This GDM consists of a main report and appendixes. The main report presents the findings of engineering and design (E&D) activities which were based on



information in the feasibility report and updated where appropriate to reflect current trends, methods of analysis, and policy. The main report also contains a non-technical synopsis of the findings, results, and analysis of activities undertaken during E&D to support the recommended plan for implementation. This GDM will serve as the primary document used to prepare plans and specifications (P&S) for project construction. The appendixes contain more detailed, but pertinent, technical data on activities discussed in the main report which have a direct bearing on project design and feasibility. The appendixes include: Economic Analysis, Hydrodynamics, Geotechnical Report, Environmental Documentation (which includes Cultural Resources), and Thin-Layer Studies. The Final Environmental Impact Statement for this project improvement is being filed concurrently with the issuance of this GDM.

10. Project Purpose and Scope. The project purpose is to modify the ship channel and the turning basin, as necessary, to accommodate the current and projected future fleet calling on the Port of Gulfport. The design of the features in this GDM are of sufficient detail to proceed to the preparation of P&S.

11. Pertinent Data. The project design recommended in this report and the design contained in the Chief of Engineers Report, dated January 16, 1978, are only somewhat different. The major differences are:

a. That no recommendation is being made to widen the project channel segments or to construct the deposition basin at this time.

b. In lieu of realigning the Ship Island Pass channel segment 1,000 feet westward as authorized, the channel segment will be relocated 1,900 feet west of the present channel alignment. The project authorization calls for construction of a littoral drift impoundment basin 38 feet deep, 300 feet wide, and 3,000 feet long opposite the western tip of Ship Island. It is recommended that construction of the deposition basin is deferred until such time that a future need is identified. The recommendations made in this GDM, therefore, are to construct an increment of the authorized project.

12. The project authorization in the WRDA of 1986 states in part, "...except that, for reasons of environmental quality, dredged material from such project shall be disposed of in open water in the Gulf of Mexico in accordance with all provisions of Federal law. For the purpose of economic

evaluation of this project the benefits from such open water disposal shall be deemed to be at least equal to the costs of such disposal." As a means of determining the environmental benefits attributable to gulf disposal, investigations were conducted to determine the costs and environmental impacts of thin-layer disposal (believed to be the least cost method). Based on the wording in the WRDA of 1986, the difference between the costs of thin-layer disposal and gulf disposal is the economic value of the environmental benefit for gulf disposal.

13. The project's local sponsor, the Mississippi State Port Authority at Gulfport (Port Authority) determined that additional container storage space was needed for existing commerce, and anticipated increased future storage area needs, with or without the considered project improvement. Accordingly, in May 1988 the Port Authority filed an application for a Department of the Army Permit pursuant to Section 10 of the River and Harbor Act of 1899 (33 USC 403), and Section 404 of the Clean Water Act (33 USC 1344). With the filing of this permit application, the Port Authority initiated plans to remove about 1.5 million cubic yards of new work dredged material from an area near the entrance to the turning basin, and use it as fill material to expand the port's container yards by 29 acres. This amount of material, therefore, will not have to be dredged as part of the Federal project, and will reduce the cost of the project commensurately. Plate 1 shows the area to be dredged by the Port Authority, and the location for the port expansion.

14. Local Cooperation - The Mississippi State Port Authority at Gulfport, Mississippi, serves as the local sponsor for the existing Federal project and for the recommended project modifications. The Mississippi State Legislature passed the Mississippi Investment Act of 1986 (Senate Bill 2794), which authorized 20 million dollars for port improvement. This bill was signed into law by the Governor in March 1986. Modifications to the existing Federal project for Gulfport Harbor according to the recommended plan of improvement are conditioned subject to the local sponsor providing the following items of local cooperation in accordance with the WRDA of 1986:

a. Pay 25 percent of the total costs of construction of general navigation features assigned to commercial navigation.

b. Pay an additional 10 percent of the costs of general navigation features of the project in cash over a period not to exceed 30 years, at an interest rate determined

by the Secretary of the Treasury. The value of LERRD shall be credited against this additional 10 percent, except that in no event shall any wharf modification within berthing areas be considered as a creditable component of the LERRD for the additional 10 percent share the local sponsor is to pay.

c. Construct, in accordance with the provisions of the Department of the Army Permit, the 29-acre port expansion facility fully at the expense of the local sponsor. Construct, operate, and maintain, at its own expense, all other project facilities except those for general navigation.

d. Provide to the United States all lands, easements, and rights-of-way including dredged material disposal areas, and perform all relocations or alterations of facilities determined by the Government to be necessary for construction, operation and maintenance of the project.

e. Perform or assure performance of all necessary utility alterations and relocations determined by the Government to be necessary for construction, operation, and maintenance of the project.

f. Provide or pay to the Government the full cost of providing all retaining dikes, wasteweirs, bulkheads and embankments, including all monitoring features and stilling basins, determined by the Government to be necessary for construction, operation, or maintenance of the project.

g. Provide and maintain adequate depths in vessel berthing areas and local access channels serving the terminals.

h. Prohibit erection of any structure within 100 feet of the project channel as authorized.

i. Hold and save the United States free from damages due to the construction and maintenance of the project, except for damages due to the fault or negligence of the United States or its contractors.

j. Comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, as amended, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

k. Comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, in connection with the construction, operation, and maintenance of the project.

15. Local Support - Local interests, including the Governor of the State of Mississippi, support the plan of improvement for the Federal navigation project at Gulfport. Their support has been expressed at conferences and at public meetings. The local sponsor has reviewed the Draft Local Cooperation Agreement (LCA) and has provided a Certificate of Authority to act as local sponsor, a Letter of Intent to support the project, and a Financing Plan. Copies of these documents are provided in Exhibit A at the end of this report. First cost of the required local cooperation is estimated to be \$13,272,000, and annual economic costs are estimated at \$578,000. The annual costs include interest and amortization of the total investment and the cost of annual maintenance dredging. The Port Authority has indicated a willingness and ability to fulfill the required conditions of non-Federal sponsorship. The following are names, titles, and addresses of the principal officers and representatives responsible for fulfillment of the required conditions of local cooperation:

Mr. Bert Allen, President
1122 Pass Road
Gulfport, Mississippi 39501

Mr. Dalton McGuire, Vice President
1115 Pass Road
Gulfport, Mississippi 39501

Mr. Charles A. Webb, Jr., Secretary
Post Office Box 4019
Gulfport, Mississippi 39501

Mr. Henry Edward Blakeslee, III
Post Office Box 4079
Gulfport, Mississippi 39502

Mr. Doug Medley
Post Office Box 4266
Gulfport, Mississippi 39501

16. Hydrodynamics of Mississippi Sound - Mississippi Sound is a shallow coastal lagoon, measuring 80 miles along the Gulf of Mexico coast from Mobile Bay, Alabama, in the east, to Lake Borgne, Louisiana, in the west. It is about nine miles wide, measured along a north-south axis, extending from the Mississippi coastline to a series of sandy barrier islands which separate Mississippi Sound from the Gulf of Mexico. The sound has a mean depth of 10 feet mean low water, and more than 99% of the system is shallower than 20 feet at mean low water. The weather of the northern Gulf of Mexico is dominated by the Bermuda High Pressure System from spring to early fall resulting in anticyclonic winds blowing predominately from the southeastern sector. During late fall and winter the winds are associated with frontal passages, causing resultant wind flow from the northern sector.

17. Freshwater discharge into this area of Mississippi Sound is primarily from the Pearl River and averages approximately 12,800 cfs. The Pearl River receives drainage from a basin of approximately 8,700 square miles. In addition, freshwater from the Mississippi River may enter Mississippi Sound during flood conditions via the Bonnet Carre Spillway into Lake Pontchartrain and Lake Borgne. Since its construction in 1927, the spillway has operated on seven occasions, 1937, 1945, 1950, 1973, 1975, 1979, and 1983. During these periods the floodway was in operation for between 13 to 75 days with an average discharge of approximately 141,000 cfs.

18. Circulation patterns within the vicinity of the project are controlled by astronomical tides, winds, and freshwater discharges. In Mississippi Sound and the adjacent tidal waters, the tidal variation is diurnal with an average period of 24.8 hours. Tides within Mississippi Sound range up to 2.5 feet with the average measuring 1.5 feet. Although the tidal range caused by astronomical forces is relatively small, winds can induce larger variations. Strong winds blowing from the north, "northers", can blow water out of the Sound and result in current velocities of several knots in Ship Island Pass. The reverse occurs with winds blowing from the southeast, which tends to pile-up water along the shoreline. In addition, tropical occurrences such as hurricanes influence water velocities and water level elevations. The magnitude of typical tidal currents range between 0.5 - 1.0 fps. In the project area of Mississippi Sound the currents are mostly oriented east-west.

19. The Gulf of Mexico, in the vicinity of the project area, is characterized by transient net currents that are largely driven by wind forces. The diurnal tide in this area is much less than most other shelf regions of the United States. The tides are the source of variation in water level, and the driving force of the oscillatory currents on the inner continental shelf. This area of the northern Gulf of Mexico is bounded by the barrier islands; Cat and Ship on the north, and the Chandeleur Islands and the shallow waters of Chandeleur Sound of the west and southwest.

20. Wave intensity of the Mississippi-Alabama shelf is low to moderate with wave periods ranging from three to eight seconds and wave heights rarely over 7 feet. However, hurricane or storm conditions may produce larger waves.

21. The Gulfport Harbor navigation project was analyzed utilizing a two-dimensional hydrodynamic model which was developed during the Mississippi Sound and Adjacent Areas Study. The major focus of this study was to determine the physical and environmental impacts resulting with different disposal practices and associated channel alignments and dimensions. The results, however, do provide insight into the physical and environmental impacts associated with various channel widths and alignments. As part of this study, the pre-project conditions, i.e. channel depth 10-12 feet, were compared to the existing conditions, i.e. channel depth 30-32 feet. The pre-project conditions also included the closure of Camille Cut, a break in Ship Island caused by Hurricane Camille in 1969. Results of this comparison indicated that no significant changes in circulation or salinity patterns had occurred due to construction of the existing project.

22. The effects associated with the opening of Camille Cut appear to have resulted in greater impact to circulation and salinity patterns of this region of Mississippi Sound than construction of the existing Federal project at Gulfport. Other model studies investigating the impacts associated with the improvements of the Federal projects at Pascagoula, Mississippi, and Mobile, Alabama, have indicated that the deepening and/or widening of these channels would result in localized changes in current velocities and salinity gradients but that these changes do not result in significant changes in overall circulation or salinity patterns. Appendix B (Hydrodynamics) provides additional information on the hydrodynamics of the project area.

23. Geology - Gulfport Harbor is on the southern shore of Harrison County in western Mississippi. Physiographically

this area is in the Coastal Lowlands subdivision of the East Gulf Coastal Plain section of the Coastal Plain Province. This area ranges in elevation from sea level to about 30 feet NGVD. The essentially flat, to gently undulating, locally swampy Coastal Lowlands are underlain by alluvial, deltaic, estuarine, and coastal deposits and merge with the fluvial-deltaic plains of the streams of the area. The area offshore of the barrier islands is part of the Mississippi-Alabama Shelf section of the Continental Shelf Province.

24. The barrier islands have a broad well-developed beach, backed by dunes on the gulf side. Beach and intermittent marsh occur on the north shore of the islands. The interior of the islands is either broad, low sand flats, 1 to 2 feet above sea level, with marshes and shallow lakes or vegetated beach ridges 5 to 15 feet above sea level. Erosion of the eastern ends of the islands and accretion on the western ends indicate considerable occurrence of longshore drift. The rate of accretion is greater than the rate of erosion so that the islands have grown westward with time. The barrier island facies consist of well-sorted, medium-grained, mature quartzose sand containing less than 3 percent feldspar and having a mineral suite rich in staurolite and kyanite. The average width of the facies is 2.5 miles, with an average thickness of 40 feet. Immediately south of the barrier island system is a nearshore fine-grained facies similar in lithology to that of Mississippi Sound. Movement of sediment from the Sound forms fine-grained facies which overlap the Mississippi-Alabama shelf sand facies in a zone about 7 miles wide, south of the islands.

25. The Mississippi-Alabama shelf is a triangular area, on the seaward side of the barrier islands, extending from the Mississippi River delta on the west to the DeSoto Canyon south of Panama City, Florida, on the east. The shelf is about 80 miles wide in the west and is an extensive, almost flat plain bounded on the landward side by the relatively steep but narrow shoreface of Mississippi Sound.

26. Previous Investigations - In connection with the 1976 Feasibility Study on Gulfport Harbor, investigations included economic studies, hydrographic surveys, subsurface investigations (sample borings), water quality investigations, special environmental studies, public meetings, and workshops. The result and summary of these investigations are contained in House Document No. 96-18 dated January 15, 1979.

27. Mississippi Sound and Adjacent Areas Study - The Mississippi Sound and Adjacent Areas Study, conducted by the

Mobile District from 1978 through 1983 and endorsed by the Chief of Engineers on 22 August 1985, provided data related to water circulation, sediment characteristics, properties of dredged material, location of critical environmental areas, and values of submerged bottoms. Data collection efforts developed baseline data for macroinfauna, sediment distribution, and hydrodynamic conditions in Mississippi Sound and the nearshore Gulf of Mexico. Additionally, numerical models were developed to aid in understanding the ecosystem and predicting future conditions under several channel development scenarios. A large amount of the information derived from the Mississippi Sound and Adjacent Areas Study was utilized in this GDM.

28. Reevaluation Study - When the recommended improvements to Gulfport Harbor were authorized, the data in the feasibility study was nearly 10 years old. During this 10 year period there was a significant change in commodity mix, traffic movements, and oil prices. While the recommended improvements were before Congress, project costs and benefits were updated using cost indices. These indexed costs and benefits indicated that the recommended project was approaching infeasibility. Accordingly, a reevaluation study was conducted to determine if the authorized improvements to the Gulfport Harbor project were economically feasible. In the reevaluation study, 5 channel configurations with increases in depth ranging from 2 to 6 feet, along with varying channel widths and bend widening, were evaluated. In addition to these channel alternatives, the five disposal options considered in the 1976 feasibility report were reconsidered. An economic analysis and benefit evaluation was also completed. The study resulted in the preparation of a Reevaluation Report dated February 1988 which determined that there is a feasible plan for navigation improvements at Gulfport Harbor, and recommended continued work on the GDM. This Reevaluation Report was approved by the South Atlantic Division Engineer on April 28, 1988.

29. Investigations Made for This Report - The investigations made in connection with this GDM included:

a. Geotechnical Investigations - Prior to publication of the 1976 Feasibility Report on Gulfport Harbor, 52 boring samples were taken in the project area. In the summer of 1987, 55 new vibracore borings were taken to augment the geotechnical data already collected. The new borings completed the data sets necessary to develop comprehensive information about the types and characteristics of the sediments in the Gulfport Harbor project area. This data was

used to aid in the evaluation of dredging and disposal methodologies, and the environmental analysis for this study. Appendix C, Geotechnical Report, contains detailed data on subsurface conditions in the project area.

b. Soil Conditions - The project soil conditions are subdivided into the Harbor area, Mississippi Sound Channel, Ship Island Pass, and the Gulf Channel. The Harbor area soils analyzed include the turning basin and the berthing areas. The Mississippi Sound channel segment includes soils analysis from the mouth of the harbor extending to Ship Island Pass. The Ship Island Pass segment includes analysis of soils 2,000 feet west of the existing channel alignment, to cover an array of considered channel alignments in this vicinity. The Gulf Channel segment includes a reach from Ship Island Pass to the outer limits of the project in the Gulf of Mexico.

(1) Harbor Area - Soils in the Harbor area contain soft black and gray clays of high plasticity (CH), firm gray clayey sand (SC), firm silty clay (CL), and poorly graded medium to fine grained sand (SP). A large portion of the material within the turning basin, down to -40 feet MLLW (Mean Lower Low Water), consists of firm clays, clay-sands, and sands that could be useful as hydraulic fill for construction purposes.

(2) Mississippi Sound Channel - The predominant soils encountered are plastic clays (CH), poorly graded sands (SP), and silty sands (SM). Occasional pockets of clayey sands (SC) and silty clays (CL) are also present. From the harbor to the Gulf Intracoastal Waterway, typically, there are six to eight feet of the clay overlying the sandy soils (SP & SM), although along some stretches of the channel no sand was found down to the maximum project cut of -40 feet MLLW. Near Ship Island, the upper level sediments are composed almost entirely of sand and silty sand.

(3) Ship Island Pass - The material in this reach consists of both fine grained and sandy soils. The former group has an average in situ density of 92 pounds per cubic foot and include plastic clays (CH), clayey-silty sands (SC), and silts (ML). Most of this material is very soft, although a few layers of firm SC material are present. The latter group has an average in situ density of 126 pounds per cubic foot, and includes poorly graded sands (SP), and silty sand (SM).

(4) Gulf Channel - In the Gulf Channel the soils, from the upper layers down to the maximum project cut of -42

feet MLLW, consist almost entirely of soft gray plastic clay

(CH). This material averages 87 pounds per cubic foot in situ.

c. Hydrographic Surveys - Current hydrographic surveys were used to configure and to evaluate the alternative channel alignments, and to evaluate the quantities of dredged material associated with each considered alternative plan for project improvement.

d. Environmental Studies - A monitoring program to determine the short term impacts associated with the disposal of new work dredged material in a thin layer (less than 1-foot) was initiated in December 1986 (TAI, Environmental Sciences, Inc. 1988. Monitoring Environmental Impacts Associated with Open-Water Thin-Layer Disposal of New Work Dredged Material at Gulfport, Mississippi). The final report was submitted to the Mobile District, Corps of Engineers, under Contract Number DACW01-87-0020 and is included in Appendix E of this GDM. Approximately 50,000 cubic yards of virgin material was dredged from the bottom of the existing Federal channel at Gulfport and disposed in an open water disposal site within Mississippi Sound. To determine the impacts associated with this disposal, a number of parameters were monitored immediately before disposal and at 2-, 6-, 20-, and 52-weeks post disposal. The results of these studies were used to:

(1) Measure and characterize disposal-induced suspended sediment fields as compared to ambient conditions.

(2) Assess changes in sediment characteristics resulting from thin-layer disposal.

(3) Evaluate the effectiveness of the particular dredge plant used in attaining a uniform thin layer.

(4) Determine the areal extent of disposed material and changes in distribution of disposed material through time.

(5) Determine the persistence of the thin layer through time.

(6) Assess the impacts of dredged material disposal on the benthos.

(7) Establish the rate and method of recovery of the benthos to pre-project conditions.

(8) Determine whether or not utilization by fisheries resources differs in the disposal area as compared to surrounding reference areas.

e. Thin-Layer Study Results - The results of the thin-layer study indicate that:

(1) New work dredged material can be dispersed in a controlled thin layer.

(2) Recovery of the benthic community began within 6-weeks post disposal.

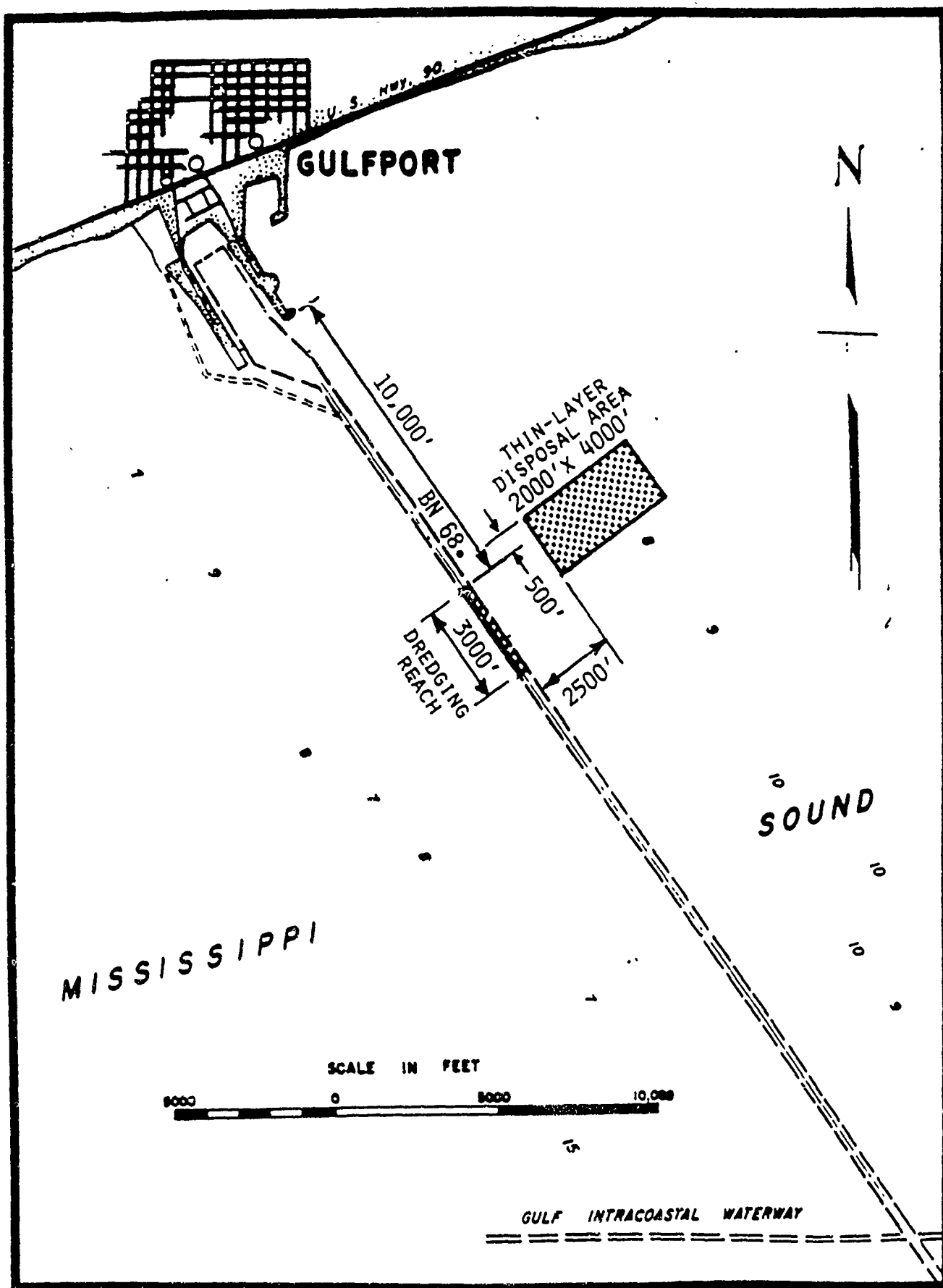
(3) By 20-weeks, no differences between the disposal fringe or reference sites could be detected.

(4) Recovery was primarily mediated by rapid adult migration into the area with some survival and subsequent migration through the disposed materials.

(5) The impacts of the disposal appear to have been confined to a limited portion of the fisheries resource and were short term (less than 6 weeks).

f. The National Marine Fisheries Service and the Fish and Wildlife Service have indicated that they do not believe that the results of this test can be extrapolated to the possible impacts resulting from the disposal of over 8 million cubic yards of material, over a 7 to 10 month period, in Mississippi Sound. They have indicated that additional extensive studies would be required to provide the information they believe necessary to adequately define the impacts associated with using this disposal method at Gulfport. Figure 3 shows the dredging and disposal locations of the thin-layer test which was completed in 1988. More detailed information on this thin-layer test is provided in Appendix E.

30. Thin-Layer Demonstration Program - As directed by the WRDA of 1988, a study team was developed by the Mobile District to formulate a plan and implement a thin-layer demonstration test (not to exceed 3 million cubic yards of dredged material). An initial plan of studies to accomplish this test was submitted to South Atlantic Division, and the Office of The Chief of Engineers in March 1989. The demonstration test will be conducted during construction of the considered project improvement and will continue for approximately 2 years following construction. Additional details on the demonstration program are contained in the Appendix D (Environmental Documentation) and the Final Environmental Impact Statement (FEIS).



GULFPORT HARBOR, MISSISSIPPI
DREDGING REACH AND DISPOSAL AREA FOR THIN-LAYER TEST

31. Environmental Considerations - A draft EIS considering the proposed improvements to navigation at Gulfport Harbor, Mississippi, was coordinated with Federal, state, and local agencies and the concerned public in June 1976. In response to comments, the draft EIS was revised in June 1977, and an Addendum was prepared in December 1977 and transmitted to the Environmental Protection Agency. This revised draft identified several possible techniques for the disposal of dredged material and recommended further investigations to determine the appropriate disposal method to be utilized during construction and maintenance of the project. The WRDA of 1986 specified that all dredged material would be disposed in the Gulf of Mexico in accordance with all Federal laws and regulations. Due to the age of the original revised draft EIS and the information contained within it, and because the authorizing legislation specified gulf disposal, the draft EIS was revised and re-coordinated prior to the preparation of the FEIS.

32. Gulf Disposal Site Designation - The Environmental Protection Agency (EPA), the agency responsible for designating ocean disposal sites, approved 2 sites at Gulfport for interim use in 1977 based on historical use of the sites. The FEIS for the designation of these sites was filed in January 1987. The proposed rule for the designation of the sites was published in August 1987 and the final rule was published on April 4, 1988.

33. Evaluation of Sediments for Ocean Disposal - The impact of disposal of sediments from the Gulfport channel on marine organisms has been evaluated following standard toxicity and bioaccumulation procedures. Results of these evaluations indicate that the toxicity of the materials proposed for disposal is minimal and although the organisms tested showed some ability to bioaccumulate certain parameters, the magnitude of this potential is not significant (see Appendix D).

34. Environmental Monitoring Plans - The environmental monitoring plan has been developed in coordination with EPA and the State of Mississippi. Field sampling will be oriented toward determining the impact of disposal on physical-chemical-biological aspects of the disposal area and the fate of the material disposed. Details of the monitoring plan can be found in the FEIS.

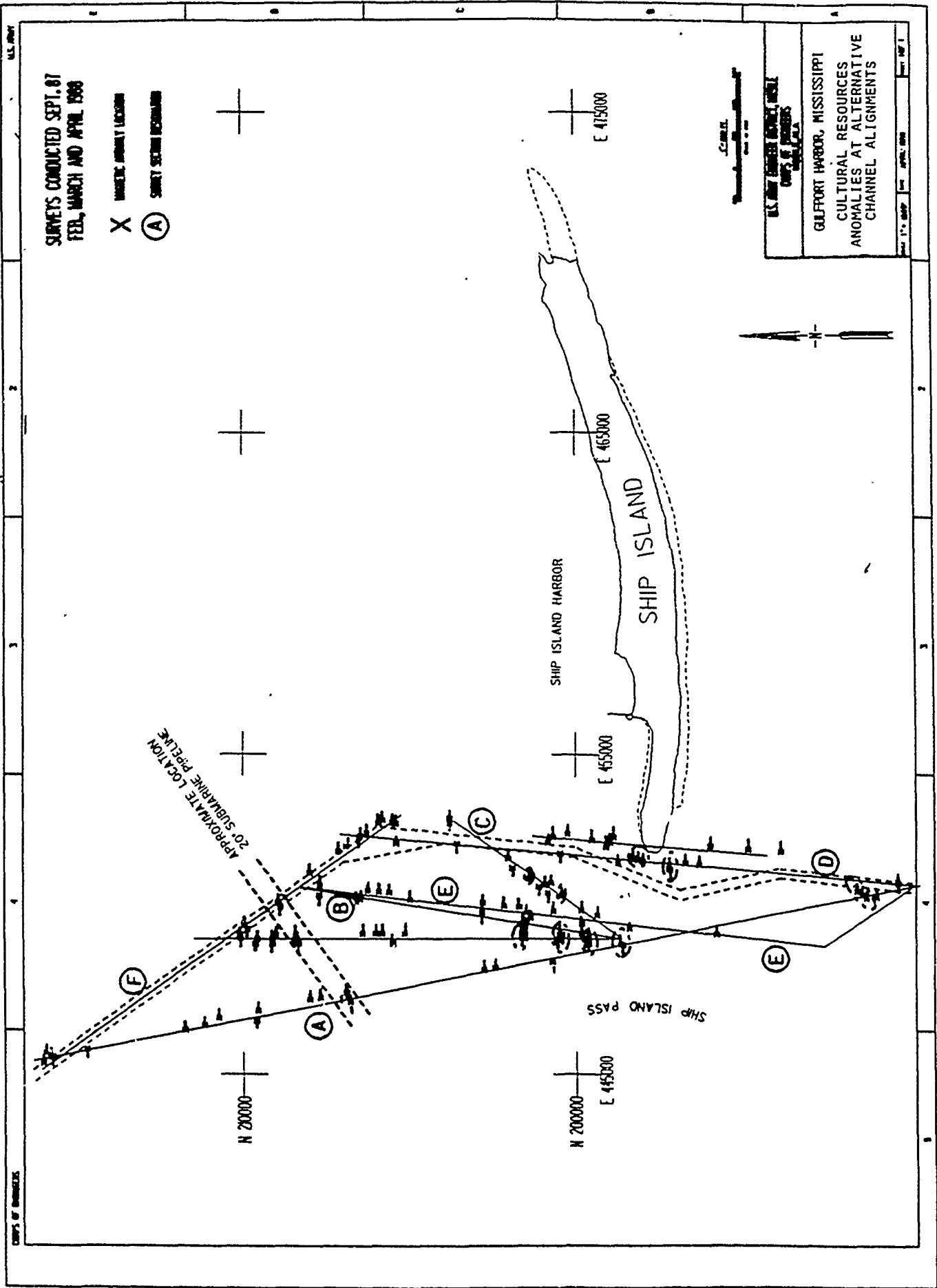
35. Cultural Resources Studies - In February 1987, a literature search was conducted to determine the potential for submerged cultural resources that could be affected by the

proposed improvements to Gulfport Harbor (OSM Archaeological Consultants, Inc., Contract No. DACW01-87-M-3058). A total of 9 historic period shipwrecks were recorded in Mississippi Sound and the Gulf of Mexico near Ship Island. As a result of these investigations it was determined that, with the exception of the vicinity of Ship Island Pass, there was little potential for submerged cultural resources along the remainder of the channel. The report was filed with Mississippi State Historic Preservation Officer who concurred that underwater remote sensing surveys were necessary only in the vicinity of Ship Island.

36. Underwater remote sensing surveys of the alternative channel alignments, in the vicinity of Ship Island Pass, were initiated in September 1987 and completed in April 1988. Equipment employed included a range/range positioning system, marine magnetometer, side scan sonar and survey fathometer. A total of 56 miles of survey lines were run, including 6 alternate channel alignments and the existing channel between Channel Markers 13-14 and 45-46. During the survey 118 magnetic anomalies were recorded. Of these, 20 anomalies have been recommended for identification and evaluation: 3 on Alignment A, 6 on Alignment B, 3 on Alignment C, and 8 on Alignment D. None of the anomalies recorded on alignment E or the existing channel appear to warrant further consideration. Figure 4 shows the alternative channel alignments and related anomalies identified during this survey. The report of the underwater surveys has been filed with the Mississippi State Historic Preservation Officer and National Park Service-Atlanta. Appendix D provides more detail on the cultural resources investigations made for this study.

37. As a result of the underwater surveys conducted in 1987-1988, the 3 magnetic anomalies, that potentially represented submerged cultural resources in the vicinity of alignment A (the recommended channel alignment), were investigated to determine their nature and character. In November 1988, underwater investigations identified no shipwrecks which would be eligible for inclusion on the National Register of Historic Places. More details concerning this investigation are contained in Appendix D.

38. National Register Properties - Fort Massachusetts on Ship Island is listed on the National Register of Historic Places. In the past, the National Park Service has periodically requested that material dredged from Ship Island Pass be placed in the vicinity of the fort to prevent damage from erosion. These activities will be continued under the considered project modification, however, the fort will not be



affected. There are no other National Register properties in the project vicinity.

39. Pipeline Investigation - A 20-inch diameter crude oil submarine pipeline owned by the Chevron Pipeline Company crosses the existing Federal navigation project in Mississippi Sound. Early in the plan reformulation process, strong indications were that the best channel alignment for the considered project construction would extend along the existing channel alignment. Accordingly, a sub-bottom investigation was conducted to locate the exact horizontal and vertical elevations of the pipeline, to within +/- 1-foot. The investigation extended for 600 feet on each side of the mid-point of the channel at the pipeline crossing, and included hydrographic surveys, transects, a magnetometer search, and jet probes. These investigations found that the pipeline is located about -53.0 feet MLLW on the west side slope, -47.5 feet MLLW on the east side slope, and -54.8 feet MLLW at the centerline of the channel. Based on these findings, if the project were constructed along the present channel alignment, the pipeline would not require relocation, to maintain a minimum cover of 7 feet as required by Chevron Pipeline Company (see Plate 8). After evaluating the considered plans of improvement, alignment A was selected as the best channel alignment. The Chevron pipeline crosses the recommended channel alignment, approximately 3,600 feet west of the existing channel alignment, at an elevation of about -20 feet MLLW. Accordingly, the pipeline will have to be lowered about 27 feet in order to afford safe passage for vessel traffic through the recommended channel alignment, and to provide the minimum amount of cover as required by Chevron Pipeline Company. Also, the DOA permit (MS62-72-X) for the pipeline will have to be modified.

40. Real Estate Study - An investigation was conducted by Mobile District personnel to address the real estate requirements for the Federal project improvement. Also addressed was a port expansion plan to be implemented by the Port of Gulfport. Following a comprehensive analysis by their consulting engineering firm, the Port Authority decided to construct a 29-acre port expansion project independent of the considered Federal project improvement. This 29-acre area will be utilized for needed container storage area. The only real estate requirement for the Gulfport Harbor Federal project improvement is a construction easement to provide temporary storage areas for the stone dike which would be removed from the southern portion of the turning basin prior to dredging. The 1 1/2-acre temporary storage area (see Plate 10) provided by the local sponsor will be utilized for less

than 30 days. A project economic cost estimated to be \$1,000, therefore, is assigned to its use. Costs for lands and damages are explained on Exhibit C-2-79.

41. Relocations - The recommended channel alignment for this project necessitates the relocation of the Chevron 20-inch crude oil pipeline. The existing pipeline will remain in service until a new relocated pipeline segment can be installed. Costs to relocate the pipeline are a local responsibility.

42. Coastal Processes - The Waterways Experiment Station, Coastal Engineering Research Center (CERC) performed a study of the coastal processes associated with channel shoaling and the westward migration of Ship Island into the existing Federal navigation channel at Gulfport, Mississippi. The study, which was completed in March 1988 (published February 1989), analyzed island morphologic change, bathymetric change, and wave refraction effects to determine the relationships between coastal processes and various navigation channel alignments and the considered disposal sites. The study found that the western tip of Ship Island is migrating westwardly at a rate of about 38 feet per year creating a frequent shoaling problem in the Federal navigation channel. The best solution would be to relocate the channel westward by at least 1,900 feet. The new channel segment would effectively delay the littoral shoaling problem for the 50-year economic life of the project. Additional information on the CERC study can be found in Appendix B. Information from this study was utilized by Mobile District personnel in their analysis and evaluation to determine the best channel alignment for the considered navigation improvement (see paragraph 54 - Channel Alignment).

43. Local Financing Plan and Cost Recovery Analysis - Mobile District in conjunction with the Mississippi State Port Authority at Gulfport, Mississippi, completed a detailed financing plan and cost recovery analysis to meet Corps guidance, and the State of Mississippi criteria for investment justification. This plan and analysis is provided in Appendix F.

44. Other Disposal Options Investigated - In the November 1976 Feasibility Report the following disposal plans were investigated:

a. Open Water Disposal. This option consisted of continuing to dispose of maintenance material as is now practiced for the existing Federal project. The new work material from the gulf to the west end of Ship Island would be

placed in the Gulf of Mexico. The material from the turning basin to Ship Island would be deposited in open water areas adjacent to the channel.

b. Island Construction. New work material dredged from the turning basin and the Mississippi Sound channel reach would be used to create from 1 to 3 islands in the sound.

c. Gulf Disposal. Dredged material from the considered project would be transported (via hopper barges, which were to be constructed with project funds) to approved disposal sites in the Gulf of Mexico.

45. Reformulation of the Authorized Plan - No plans outside of the scope of the authorized plan, other than a 38-foot alternative plan used to define the net benefit curve, were considered during reformulation in the GDM. In addition to the authorized plan, however, several project features were evaluated so that project implementation could be phased commensurate with economic justification of the feature and the local sponsor's ability to provide financial support. These project features are listed below:

a. No action.

b. Turning basin deepened to 32, 34, 36, or 38 feet at a 1,120-foot width.

c. Mississippi Sound channel segment deepened to 32, 34, 36, or 38 feet at a 220- or, 300-foot width.

d. Ship Island Pass channel segment deepened to 34, 36, or 38 feet at a 300-, or 400-foot width.

e. Gulf channel segment deepened to 34, 36, or 38 feet at a 300-, or 400-foot width.

f. Realignment of the channel segment at Ship Island Pass.

46. Design - Design of the various features in the recommended plan of improvement of Gulfport Harbor was determined through an evaluation of existing conditions, information provided by the Gulfport Pilots Association, the application of professional judgment, and design criteria from Corps of Engineers Manual EM 1110-2-1613. Factors used in the selection of the recommended plan include the bathymetry, present operating conditions, shoaling rates, projected traffic densities, and vessel characteristics for the anticipated fleet. The application of these factors and

criteria was used to determine the channel depths, widths, alignments and turning basin dimensions which are discussed in the following paragraphs.

47. Design Vessel - Channel dimensions for the recommended plan for Gulfport Harbor were based on the most prevalent vessel that would use the Gulfport navigation channel. The vessel is a 35,000 dead weight ton (dwt) bulk carrier 686 feet long, with a 100 foot beam and a maximum draft of 38 feet. An operational static draft of 32 feet was selected for channel design purposes to provide for risk free clearance for the vessels expected to use the channel.

48. Channel Depths - Safe and efficient ship operation requires channel depths in excess of the vessel's loaded static draft. Allowances may be made for vessel squat and trim, sinkage due to brackish water, pitching and rolling, abnormal tides, and operating safety clearance. Vessels typically navigate the Gulfport ship channel at speeds between 8 and 10 knots. At these speeds operators indicate an allowance of 2 feet is adequate for squat and trim. At Gulfport, brackish water sinkage is not a significant factor and tidal fluctuations are minimal. The average tidal range is about 1.5 feet, with low water seldom falling below -0.5 MLLW, except under extreme conditions.

49. Mississippi Sound is relatively shallow and receives some protection from the barrier islands with the result that waves in the sound are shorter and lower than those in the gulf. Consequently, no allowance is required for pitching and rolling in the Mississippi Sound portion of the channel. In the gulf, however, waves of 4 to 5 feet are commonly encountered and an allowance of 2 feet for pitching and rolling is warranted. An operating safety clearance of 2 feet is considered appropriate throughout the channel. Accordingly, in addition to the vessel's loaded static draft, allowances of 4 feet in Mississippi Sound and 6 feet in the gulf are provided, based on a risk free operation. These allowances have proven satisfactory in the past with vessels ranging up to 35,000 dwt and are considered adequate for future traffic. When added to the optimum loaded static draft of 32 feet, these allowances require that channel depths of 38 and 36 feet will be provided in the gulf and Mississippi Sound, respectively. It is recognized that shippers at Gulfport will take risks (drag keel) under the with-project condition even though only a 36-foot channel is guaranteed.

50. In addition to the project depth, 2 feet of advance maintenance and 2 feet of allowable overdepth will be provided to allow for accumulation of sediment, and dredging inaccuracies, respectively. Maintenance dredging is currently

required approximately every 12 months for the gulf channel segment, every 18 months for the Mississippi Sound channel segment, and every 18 to 24 months for the existing turning basin. Because of the anticipated high shoaling rates (683,000 cy/yd for the proposed turning basin, and up to 58 cy/yd per linear foot for some reaches of the proposed sound channel), the additional 2 feet of advance maintenance is provided in addition to the project depth. If the additional 2 feet were not provided, maintenance dredging would have to be performed almost immediately after the new channel was excavated in order to maintain the project depth.

51. The cost of providing 2-foot of advance maintenance vs. 0-foot of advance maintenance during construction of the project has been analyzed. The provision of 2-foot of advance maintenance during construction of the project is more cost effective due to mobilization/demobilization costs, and the fact that material dredged at Gulfport is more controlled by the rate of advance of the dredge, than the quantity of material being removed during a pass. A walking job taking 4-foot of material is no more expensive than a walking job taking 2-foot of material.

52. It has been suggested that no allowable overdepth, or at least no more than 1-foot of allowable overdepth, be provided during construction of the project at Gulfport Harbor. On river projects and the inland navigation system, we are able to specify and control at least 1-foot of allowable overdepth. Considering the type of dredged material at this project, the wave climate, and the large sized mechanical dredge required for construction, it is impracticable to specify or obtain even 1-foot of allowable overdepth. Specifying dredging tolerances of less than 2 feet for allowable overdepth at this project would not reduce cost and would only be reflected in higher bid prices for the work. The 2-foot of allowable overdepth recommended for this project is consistent with all other deep draft channel work performed in the District. The channel depths are shown on the typical sections on Plate 2. Although a range of channel depths were examined, this combination was selected as the recommended depths.

53. Channel Widths - Determination of an adequate channel width is based on traffic, vessel, channel, and sea characteristics. For ships operating in a restricted channel the major problem is one of ship control. This, however, is most pronounced when ships pass one another, and since only one-way traffic is planned for Gulfport, this problem is not a factor. Other considerations are currents, winds, wave conditions, bends, alignment, shoaling, bottom materials, and piloting assistance.

54. Currents affecting navigation within the Mississippi Sound are basically tidal flows which generally parallel the channel. Exceptions are near the shore where flood currents turn westward, with ebb currents reversing this flow, and near the Ship Island Pass, where a strong east or west wind can produce cross-currents. Limited current measurements under favorable weather conditions indicated a maximum tidal velocity of 1.1 fps. Wind induced currents combine with tidal induced currents to produce the resultant currents. Wind measurements at Keesler Air Force Base, Biloxi, indicate prevailing winds are from the north to northeast and south to southeast, with velocities normally ranging between 4 and 12 mph. Wave conditions in the Sound are generally 3 feet or less.

55. The existing channel widths at Gulfport Harbor are less than those prescribed by the guides in EM 1110-2-1613 for the design vessel. These guides indicate that, with the favorable operating conditions described above, the maneuvering lane should be not less than 180 percent of the beam of the design vessel and bank clearances should be not less than 60 percent of the beam. Application of these guides to the design vessel yields a required channel width of 300 feet for the Sound channel, with some additional width for Ship Island Pass (bar) and the Gulf channel segment due to firmer bottom materials and the greater effects of currents and waves in the gulf. However, pilots have been navigating the existing 220-foot wide channel for a number of years with the design vessel, and although they report some difficulty during periods with strong cross winds, no collisions or groundings attributable to insufficient channel widths have occurred. Also, vessels larger than the design vessel are safely using the nearby 38-by 225-foot Bayou Cassotte channel at Pascagoula Harbor, Mississippi. Therefore, the existing channel widths (220 feet in Mississippi Sound and 300 feet in Ship Island Pass and the Gulf of Mexico) were considered adequate. Vessels loaded to the design draft of 32 feet should be able to operate in a channel of the selected dimensions without significant risks due to insufficient channel width.

56. A ship simulation study would normally be conducted before channel dimensions less than those specified by the standard Corps criteria would be recommended. However, the existing channel can be considered a prototype since the design vessel is already using the channel with the proposed bottom width, only loaded to a shallower draft than possible with the proposed improvements. On 5 August 1987 during a review conference on the Draft Reevaluation Report, representatives from the Office of the Chief of Engineers

(OCE), South Atlantic Division, and Mobile District determined that a ship simulator study was not necessary for this project. This determination was affirmed by OCE in the Project Guidance Memorandum for Gulfport Harbor dated 2 November 1989.

57. All bends will be widened in accordance with the apex, or cutoff method described in EM 1110-2-1613. This ample widening, as shown on Plate 3, combined with reduced turning angles due to an improved alignment (discussed later) should alleviate any navigation problems encountered in the bends. Channels would be straight tangents and well marked. Although the channel is subject to rapid shoaling in some areas, bottoms and side slopes in the sound are composed of soft, silty materials that present no threat to vessels on contact. All deep-draft vessels are required to use the services of local bar pilots familiar with the channel and its associated hydraulic phenomena. Accordingly, the design vessel, a 35,000 dwt bulkcarrier, is considered able to satisfactorily navigate the channel under the with-project conditions.

58. Channel Alignment - The alignment of most of the ship channel inside the Mississippi Sound will remain as presently constructed. Adjustments in the alignment through Ship Island Pass are considered warranted because of several bends which are difficult and hazardous to navigate. The channel alignment recommended in the feasibility report extended straight across the bar at Ship Island Pass, roughly perpendicular to the length of Ship Island. As a result of coastal processes in the area, Ship Island has continued to migrate to the west, encroaching upon the ship channel. A study by the Coastal Engineering Research Center (CERC) indicated that the western end of Ship Island is migrating to the west at an approximate rate of 38 feet per year (see Appendix B). This encroachment has caused abrupt changes in the alignment of the channel, because of the practice of maintaining the project generally along the thalweg around the west end of the island.

59. A number of alternative channel alignments through Ship Island Pass were examined by CERC (see Plate 4, alignments A-E), including one to restore the channel to its original alignment, and several that would relocate the channel to the west. Based upon economic and environmental evaluations, and navigation considerations, alignment A (shown on Plates 5, 6, and 7) was selected as the recommended alignment. This alignment would relocate the channel approximately 1,900 feet to the west of Ship Island, eliminating the existing dogleg and delaying shoaling problems associated with the island

migration for approximately 50 years. Alignment A is the preferred alignment from a navigation standpoint because it is the shortest, most direct route, has fewer bends than most of the other alignments considered, and has smaller turning angles than any of the other alignments. Alignment A is also the least costly and most economical alternative when considering first cost, annual maintenance, and required relocations. The abandoned portion of the existing channel would act as a deposition basin along the east side of the new channel, eliminating the need for the maintained deposition basin that would be required if the channel were restored to its original alignment across the western tip of Ship Island, (alignment D).

60. More initial excavation would be required to construct alignment A than the other alignments. This alignment would also require relocation of a 20-inch submarine pipeline that crosses the ship channel approximately 2 miles north of Ship Island. Less maintenance dredging, however, would be required for alignment A than for the other alignments, due to the trapping of the littoral material from the east by the abandoned reach of existing channel. Trapping of the littoral material by the abandoned channel segment would also serve to reduce the impacts of loss of material from Fort Massachusetts.

61. A least cost comparison of the costs and benefits of relocating the Ship Island Pass channel segment 1900 feet west of the present channel alignment found that channel alignment A is the least costly. The comparison considers the construction and maintenance costs for the authorized littoral drift impoundment basin, which would have to be constructed at channel alignment D to alleviate the littoral shoaling emanating from west Ship Island. Construction of the impoundment basin would require removal of 3,885,000 cubic yards of new work dredged material, and 140,000 cubic yards of maintenance material annually. Appendix B - Hydrodynamics, contains additional information on the littoral drift impoundment basin. The comparison also contains the relocation costs of the Chevron crude oil pipeline which would have to be relocated at channel alignment A. This relocation cost estimate was provided by Chevron Pipeline Company. Table 1 displays the costs and benefits for the existing channel alignment (alignment D), and the recommended channel alignment (alignment A).

TABLE 1

COMPARISON OF LEAST COST ALTERNATIVE
CHANNEL ALIGNMENTS A and D
 (8 7/8%)

ITEMS	CHANNEL ALIGNMENT A	CHANNEL ALIGNMENT D
FIRST COST		
DREDGING:		
Ship Island Pass	\$3,289,000	\$3,900,000
Construct Deposition Basin	0	\$4,934,000
Relocate Pipeline	\$2,400,000	0
Subtotal	\$5,689,000	\$8,834,000
ANNUAL COST		
First Cost	\$5,689,000	\$8,834,000
Int. During Construction	\$512,000	\$795,000
NET INVESTMENT	\$6,201,000	\$9,629,000
Interest and Amortization	\$505,000	\$784,000
Maintenance Dredging:		
Ship Island Pass	\$242,000	\$222,000
Deposition Basin	0	\$178,000
ANNUAL CHARGES	\$747,000	\$1,184,000
BENEFITS:		
Transportation Savings	\$127,200	\$0

62. Existing shoaling rates were determined for the turning basin, the sound portion of the channel, Ship Island Pass, and the bar portion of the channel based on historical dredging

records. With-project shoaling rates were estimated based on project channel dimensions and its proximity to the abandoned portion of the existing channel through Ship Island Pass. Existing shoaling rates were increased by a ratio of the project channel area and/or wetted perimeter as described in WES Report 2 (H-78-5) - Effects of Depth on Dredging Frequency (July 81). Shoaling rates were reduced for the reaches through Ship Island Pass where the abandoned existing channel paralleled the new alignments. Current patterns from the 1984 Mississippi Sound and Adjacent Areas Dredged Material Disposal Study prepared by the Mobile District indicate that the tidal flow is primary north-south through Ship Island Pass. Therefore, the east-west shoaling components were assumed to be proportional to the wind distribution. Wind data from the nearest station (Biloxi, Mississippi) indicated an easterly component 54.5 percent of the time and a westerly component 20.9 percent of the time. These percentages were used to estimate east and west shoaling components. It was estimated that the abandoned channel would trap 80 percent of the material moving from east to west for the reaches of the alignments where the proposed channel was relocated to the west of the existing channel. Even though alignment A has the longest reach of relocated channel, it's distance from Ship Island results in less annual maintenance quantities than for any of the other considered channel alignments.

63. In the recommended plan, as in the existing project, channel side slopes are 1 vertical on 5 horizontal. The side slope of 1 vertical on 16 horizontal, mentioned in the Geotechnical Report - Appendix C, exists at one location in the extreme southern end of the gulf channel. This is a location where very little dredging is done below the natural channel bottom depth (less than about 4 feet). The appendix states that the side slopes are quite variable, but does not suggest a reason for the variations. The 1 vertical on 5 horizontal design side slope was chosen using a review of hydrographic surveys and, an average slope was determined from existing conditions. During engineering and design for plans and specifications, the latest channel surveys will be reviewed and the pertinent slopes for the contract will be established for each channel segment. As previously discussed, the existing dogleg around Ship Island would be eliminated, and the turns just north and south of the island would be reduced from 42.5 and 41.7 degrees to 24.7 and 23.9 degrees, respectively, by relocating the channel to the west. A deposition basin would not be required for the alignments that would be relocated to the west of the existing channel because of the trapping effects of the abandoned section of existing channel. Therefore, a deposition basin was not included in any of the alignments except alignment D.

64. As previously discussed, a 20-inch submarine pipeline crosses the ship channel in Mississippi Sound about 10 miles south of the harbor. The pipeline transports crude oil from the Louisiana coast south of New Orleans to serve a refinery at Bayou Cassotte, near Pascagoula, Mississippi. The selected channel alignment would require that the pipeline be relocated to provide adequate cover at the new crossing. Plate 8 shows the cross section and plan view of the pipeline at the existing channel alignment.

65. Turning Basin - At the request of the Port Authority, a private engineering firm recently conducted an investigation of the stability of the existing East and West Pier wharves. It was determined that some stabilization of the wharves would be required if the turning basin were deepened to the authorized depth of -36 feet MLLW plus an additional 2 feet for advance maintenance and 2 feet for allowable overdepth. A review of the current and anticipated berthing practices indicated that the maximum draft of the current and projected vessel fleet expected to use the northernmost berthing areas would be 32 feet. In order to minimize the cost of stabilizing the wharves, the Port Authority decided that a two tier basin would meet its future need. The entrance and southern portion of the basin will be deepened to 36 feet as authorized, and to adequately serve the vessel fleet. The northern portion of the basin will be deepened to only 32 feet, as required to serve the vessels expected to use this area. Approximately 1,000 feet of stabilization will be required along the West Pier wharf. The cost of the stabilization, which will be borne entirely by local interests, is included in the project cost estimate.

66. The west pier sheds 1 through 8, and the south 600 feet of the east pier are on piling. The remainder of the port facilities are on solid fill piers. The east and west piers are 1,320 feet apart extending seaward to form the east and west boundaries of the Federally authorized turning basin. Except for the southerly part of the east pier, the presently authorized 1,320-foot-wide basin includes the entire water area between the bulkheads, leaving no space outside the authorized project limits for ship berths. Local interests are required to provide and maintain berthing areas outside the boundaries of the Federal project of sufficient width to prevent vessels from encroaching on the project area while berthed. Based on the characteristics of the vessels expected to use the berthing areas along both the east and west piers, a minimum width of 100 feet would be required, with the exception of the northernmost portion of the west pier where wider vessels are expected to dock. A minimum width of 110

feet would be required in the northwest berthing area. Accordingly, provision and maintenance of dockside berths by local interests would allow the authorized width of the existing turning basin to be reduced from 1,320 feet to 1,120 feet in the southern portion and to 1,110 feet in the northern portion.

67. Turning Basin Entrance - The existing turning basin is rectangular in shape and oriented generally in a north-south direction, with the ship channel entering at the southeast corner. No difficulty is experienced in reaching the docks on the east pier, but the existing configuration requires extra time and maneuvering for vessels docking at berths along the west pier. In 1975, the Port Authority extended the west pier southward and dredged a vessel berth alongside. This resulted in a dredged area 300 feet wide and 450 feet long protruding south of the Federal project basin. A considerable amount of extra time and maneuvering is required for vessels that use the new berth. With its limitations, the entrance is hazardous for vessels entering or leaving the basin because of the cross-currents that are experienced when vessels are maneuvering at reduced speed.

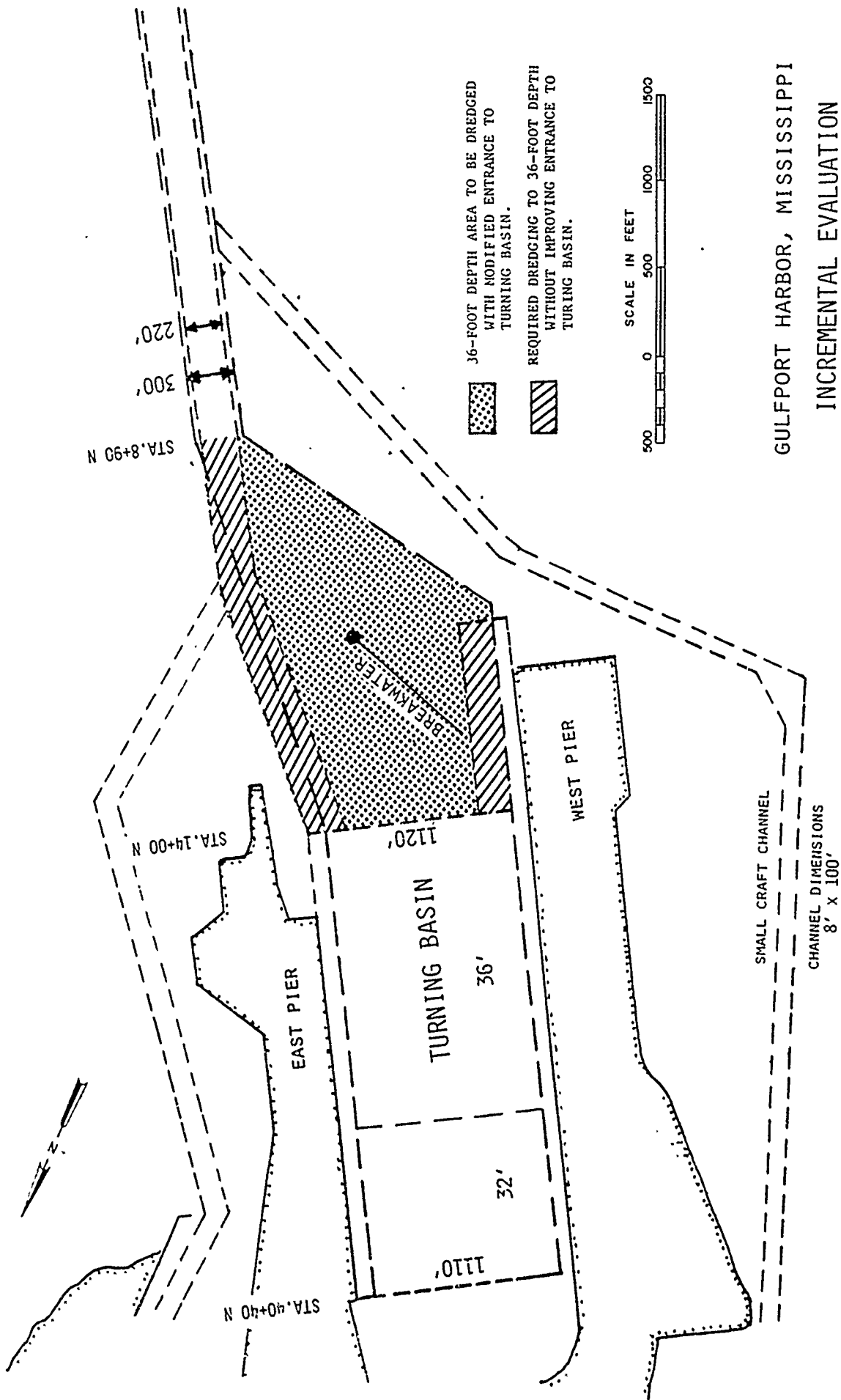
68. As authorized, the boundary of the enlarged turning basin entrance for the selected plan has been relocated to a point about 2,300 feet south of the southeast corner of the turning basin, providing an entrance angle to the west berth of about 45 degrees. This design provides an effective approach for the vessels expected to use the turning basin. The existing turning basin and the configuration for the selected plan are shown on Plate 9.

69. The seaward end of the turning basin receives some protection from a partially submerged timber and stone breakwater which was completed in 1924, with minor Government participation. The present structure, replacing one built entirely by private interests in 1911 and destroyed by storms, was constructed under the supervision of the Corps of Engineers with funds contributed jointly by the state of Mississippi, Harrison County, and the City of Gulfport. Records do not indicate that the structure was ever adopted as part of the Federal project. About 400 feet of the shoreward end of the breakwater was removed in 1968 to permit extension of the west pier and dredging of the adjacent berthing areas. Widening of the harbor approach channel as proposed would require removal of the remainder of the breakwater. The structure was originally built to reduce shoaling in the turning basin by restricting the opening for tidal flow and thereby increasing velocities. When the west pier was

extended in 1967, however, the basin entrance could no longer be restricted effectively with a breakwater. Accordingly, no provision of a breakwater or training structure is included in the recommended plan. Plate 10 shows the plan view and sections of the breakwater. This plate also shows the temporary storage location for the stone after the breakwater is removed.

70. An evaluation of the costs and benefits of enlarging the entrance to the turning basin shows that the redesigned turning basin is incrementally justified. Modification of the turning basin, as previously described, will require removal of about 2,857,100 cubic yards of dredged material. Without enlarging the entrance to the turning basin, which will require vessels to maneuver in the harbor as they currently do, removal of about 891,300 cubic yards of dredged material will be required to deepen the entrance channel to a 36-foot depth at a 220-foot width on the southeast, and a 200-foot width by 36-foot depth segment of the turning basin on the southwest. The Port Authority, however, will remove about 1,457,000 cubic yards of the dredged material in connection with its port expansion plan, prior to modification of the existing Federal project. Hence, 509,000 cubic yards of dredged material is considered in this incremental evaluation. Figure 5 displays the locations of the considered dredging at the entrance to the turning basin. The incremental evaluation of the turning basin is summarized in Table 2. Additional information on the benefits associated with the turning basin can be found in Appendix A - Economic Analysis.

71. Plan Reformulation - The feasibility report on Gulfport Harbor, Mississippi, transmitted to Congress in 1978, recommended solutions to the navigation problems experienced by the harbor. The report, instead of recommending a specific disposal plan, recommended that additional investigations would be performed during the second phase of studies. Two options were discussed in general in the feasibility report, creation of islands within Mississippi Sound and use of specialized equipment to place the dredged material in a thin layer over a large expanse of Mississippi Sound bottoms. Responses to this report from several agencies recommended that disposal of the dredged material in the open waters of the Gulf of Mexico also be considered. Initial reformulation efforts indicated that the creation of islands within the Sound was not feasible, therefore only two disposal options were considered during the reformulation efforts presented in the paragraphs below.



GULFPORT HARBOR, MISSISSIPPI
INCREMENTAL EVALUATION
OF TURNING BASIN ENTRANCE

FIGURE 5

TABLE 2

COMPARISON OF COSTS AND BENEFITS FOR ENLARGING THE
ENTRANCE TO THE TURNING BASIN
 (8 7/8%)

 FIRST COST

DREDGING:

Entrance to the Turning Basin	\$1,175,000
Remove Breakwater	\$44,000

Subtotal	\$1,219,000

 ANNUAL COST

First Cost	\$1,219,000
Int. During Construction	\$108,000
NET INVESTMENT	\$1,327,000
Interest and Amortization	\$119,500
Maintenance Dredging	\$80,000
ANNUAL CHARGES	\$199,500
BENEFITS:	
Reduction in Turning & Delays	\$734,400

Total Benefits	\$734,400
BENEFIT-COST-RATIO	3.68

=====

72. During plan reformulation in this GDM, 40 alternative plans of improvement were evaluated encompassing a wide range of channel widths and depths along 5 channel alignments (A through E) as shown on Plate 4. Evaluation of the alternative alignments through Ship Island Pass determined that the most efficient plan would include construction along alignment A. Accordingly, the 40 considered alternative plans were reduced to 8 plans along channel alignment A, all of which include a realignment of the Ship Island Pass channel segment. Table 3 shows the dimensions of the alternative plans evaluated along channel alignment A, and Table 4 provides the first costs for construction of these 8 plans using gulf disposal for the dredged material. Table 4 also provides the first costs for construction of each of the alternatives if the thin-layer disposal method were utilized to dispose of the dredged material. The plans for gulf disposal of the dredged material are labeled 1 through 8, and the thin-layer alternatives are labeled 1-A through 8-A. Table 5 presents the annual costs and benefits for each alternative shown in Table 4 at an 8 7/8% interest rate, as well as the net economic development benefits and the benefit-to-cost ratios.

73. Of the plans shown on Table 5, the project configuration which maximizes net economic development benefits utilizing the thin-layer disposal option is alternative plan 5-A. Considering gulf disposal only, Plan 5 maximizes net economic development benefits. Both plans consist of a channel segment 36 feet deep by 220 feet wide in Mississippi Sound, 38 feet deep by 300 feet wide in Ship Island Pass (relocated 1,900 feet west of the present channel alignment), and 38 feet deep by 300 feet wide in the Gulf of Mexico. Each of these plans provide for ample widening at each of the bends.

74. Although the thin-layer disposal plan would yield the greatest return on the financial investment, it is not recommended for implementation due to the following aspects: (1) environmental impacts associated with the placement of new work dredged material of this magnitude cannot be accurately projected; (2) nature and level of impacts to several significant resource categories are unknown; and (3) long-term and/or cumulative impacts cannot be predicted. In addition, comparison of possible impacts associated with this plan and those associated with offshore (i.e. Gulf of Mexico) disposal indicates that the impacts associated with offshore disposal are acceptable and have been determined to be in the public interest. Each of these aspects will be treated separately in the paragraphs that follow.

TABLE 3

GULFPORT HARBOR, MISSISSIPPI - GDM

DESCRIPTION OF CHANNEL ALTERNATIVES ¹

CHANNEL DIMENSIONS				
PLAN NO.	ALIGNMENT	MS SOUND	PASS	GULF
1	A	32X300	34X400	34X400
2	"	34X300	36X400	36X400
3	"	36X300	38X400	38X400
4	"	38X300	38X400	38X400
5	"	36X220	38X300	38X300
6	"	36X220	38X300	38X400
7	"	36X220	38X400	38X400
8	"	38X220	38X400	38X400

¹ These alternative plans consider gulf disposal of the dredged material.

TABLE 4
Summary of Project First Costs
Alternative Plans of Improvement
Gulfport Harbor, Mississippi - GOM
(\$000)
(Gulf Disposal Plans 8 7/8% Interest)

DESCRIPTION	1	1-A	2	2-B	3	3-A	4	4-A	5	5-A	6	6-A	7	7-A	8	8-A
DREDGING:																
Ms. Sound	22,100	5,499	27,752	6,918	33,331	8,319	39,782	9,939	20,965	5,214	24,331	6,060	24,331	6,060	39,782	9,939
Ship I. Pass	2,909	1,433	3,572	1,736	4,266	2,053	3,836	1,856	3,209	1,502	4,229	1,694	4,229	2,036	3,836	1,856
Gulf Channel	1,917	1,917	3,228	3,228	4,340	4,840	4,801	4,801	3,187	3,187	4,801	4,801	4,801	4,801	4,801	4,801
Breakwater Removal	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
Sub-total	26,969	8,892	34,595	11,925	42,430	15,255	48,462	16,639	27,484	9,946	32,656	12,598	33,404	12,940	48,462	16,639
Engineering & Design	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010	2,010
Supv. & Aids.	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253	1,253
Sub-total	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263	3,263
Contingencies (15%)	4,045	1,334	5,189	1,789	6,372	2,288	7,269	2,496	4,123	1,492	4,898	1,890	5,011	1,941	7,269	2,496
Nav. Aids (USCG)	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
TOTAL COST - GEN. IMP.	34,277	13,489	43,047	16,977	52,115	20,806	58,994	22,398	34,870	14,701	40,817	17,751	41,678	18,144	58,994	22,398
TOTAL FED. FIRST COST (75% GOM)	25,708	10,117	32,285	12,733	39,086	15,605	44,246	16,799	26,153	11,026	30,613	13,313	31,259	13,608	44,246	16,799
NON-FED. FIRST COST:																
Temporary Easement	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dredging Berthing Areas	357	90	357	90	357	90	465	117	357	90	357	90	357	90	465	117
Harb. Stabilizing	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Pipeline Relocation	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
Local Share GN Costs	8,569	3,372	10,762	4,244	13,029	5,202	14,749	5,600	8,743	3,675	10,204	4,438	10,420	4,536	14,749	5,600
TOTAL LOCAL FIRST COST	13,427	7,963	15,620	8,835	17,887	9,793	19,715	10,218	13,601	8,266	15,062	9,029	15,278	9,127	19,715	10,218
TOTAL PROJECT FIRST COST	39,267	18,212	48,037	21,700	57,105	25,529	64,092	27,148	39,886	19,424	45,807	22,474	46,568	22,867	64,092	27,148

TABLE 5
Summary of Project Annual Costs, and Benefits
Alternative Plans of Improvement
Gulfport Harbor, Mississippi - GDM
(\$000)
(Gulf Disposal Plans 8 7/8% Interest)

ANNUAL COST ITEMS	1	1-A	2	2-A	3	3-A	4	4-A	5	5-A	6	6-A	7	7-A	8	8-A
TOTAL FEDERAL FIRST COST	25,708	10,117	32,285	12,733	39,086	15,605	44,246	16,799	26,153	11,026	30,613	13,313	31,259	13,608	44,246	16,799
Int. During Constr.	3,568	1,404	4,480	1,767	5,424	2,166	6,140	2,331	3,629	1,530	4,248	1,848	4,338	1,888	6,140	2,331
NET FEDERAL INVESTMENT	29,276	11,521	36,765	14,500	44,510	17,771	50,386	19,130	29,782	12,556	34,861	15,161	35,597	15,496	50,386	19,130
FEDERAL:																
Interest and Amortization	2,636	1,037	3,310	1,305	4,007	1,600	4,536	1,722	2,681	1,130	3,139	1,365	3,205	1,395	4,536	1,722
Maintenance Dredging:																
Mississippi Sound	1,075	197	1,647	302	2,236	410	2,842	520	818	150	818	150	818	150	2,842	520
Ship I. Pass	245	96	312	123	375	143	392	154	242	95	242	95	371	146	392	154
Gulf	273	273	347	347	469	469	469	469	303	303	469	469	469	469	469	469
Total Maintenance Dredging	1,593	566	2,306	772	3,080	1,027	3,703	1,143	1,363	548	1,529	714	1,658	765	3,703	1,143
Maintenance Nav. Aids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Fed. Annual Charges	4,229	1,603	5,616	2,077	7,087	2,627	8,239	2,865	4,044	1,678	4,668	2,079	4,863	2,160	8,239	2,865
NON-FEDERAL:																
Total Local First Cost	13,427	7,963	15,620	8,835	17,887	9,793	19,715	10,218	13,601	8,266	15,062	9,023	15,278	9,127	19,715	10,218
Interest During Constr.	1,863	1,105	2,168	1,226	2,482	1,353	2,736	1,418	1,804	1,147	2,090	1,253	2,120	1,267	2,736	1,418
NET LOCAL INVESTMENT	15,290	9,068	17,788	10,061	20,369	11,152	22,451	11,636	15,485	9,413	17,152	10,282	17,398	10,394	22,451	11,636
NON-FEDERAL:																
Interest & Amortization	1,377	816	1,601	906	1,834	1,001	2,021	1,048	1,394	848	1,544	926	1,566	936	2,021	1,048
Maintenance Dredging	82	15	82	15	82	15	82	15	82	15	82	15	82	15	82	15
TOTAL NON-FEDERAL CHARGES	1,459	831	1,683	921	1,916	1,019	2,103	1,063	1,476	863	1,626	941	1,648	951	2,103	1,063
TOTAL ANNUAL CHARGES	5,687	2,435	7,300	2,998	9,003	3,646	10,343	3,928	5,520	2,541	6,294	3,020	6,511	3,111	10,343	3,928
BENEFITS:																
Transportation Savings	2,530	2,530	3,800	3,800	4,937	4,937	4,937	4,937	4,937	4,937	4,937	4,937	4,937	4,937	4,937	4,937
BENEFIT/COST RATIO	0.44	1.04	0.52	1.27	0.55	1.35	0.48	1.26	0.89	1.94	0.78	1.63	0.76	1.59	0.48	1.26
NET BENEFITS	(3,157)	95	(3,500)	801	(4,066)	1,291	(5,406)	1,009	(584)	2,396	(1,357)	1,917	(1,574)	1,826	(5,406)	1,009
B/C WITH ROOED BENEFITS	1.02	1.11			1.14		1.10		1.43		1.30		1.28		1.10	
FOR GULF DISPOSAL																
Note: There are no additional benefits for a 38-foot channel.																

75. Thin-layer demonstration tests previously conducted by the Mobile District determined that no significant short-term (52 weeks) adverse environmental impacts resulted from thin-layer placement of approximately 350,000 cubic yards of maintenance dredged material from the Fowl River project in Mobile Bay and 50,000 cubic yards of new work material dredged from the Gulfport Harbor project. These studies were restricted to the impacts on bathymetry, water quality parameters during disposal including dissolved oxygen, salinity, temperature, and total suspended solids, macroinfauna, and adult fisheries. The actual time required for the placement of material during these tests was 2 months and 2 days, and impacted approximately 350 acres and 250 acres of estuarine bottoms, respectively. The placement of approximately 8.8 million cubic yards as proposed at Gulfport would require approximately 10 - 12 months and impact approximately 8,000 to 10,000 acres. Because of the significant difference in quantity of material and length of time required for placement compared to our previous studies, we are unable to extrapolate these results to the proposed alternative.

76. As indicated in paragraph 75 above the previously conducted studies concerning the impacts associated with thin-layer disposal were restricted to bathymetry, certain water quality parameters during disposal, macroinfauna, and adult fisheries. As a result of the coordination of these studies, other significant resources have been identified which may be impacted by the implementation of the thin-layer alternative including: larval component of the fishery, meiofauna, endangered species, other aspects of water quality. Also, limitations of the previous studies design, especially with regard to the impacts to the adult components of the fishery, have been identified. The planned demonstration program attempts to address these shortcomings as well as provide information relative to the long-term impacts associated with thin-layer disposal. Additional water quality parameters to be addressed include fecal coliform, pH, ammonia nitrogen, nitrate and nitrite, total Kjeldahl nitrogen, orthophosphate, total phosphorus, turbidity, sulfates, chlorophyll a, and total organic carbon or biochemical oxygen demand. These parameters would be measured prior to the initiation of disposal, during the actual disposal operations, and after disposal has ceased. In addition, resuspension potential would be monitored for a six-month period following deposition. These additional water quality efforts will not only provide information relative to the extent of turbidity increase due to the operation but also the impacts of the operation and increase of turbidity on the chemical balance

and therefore overall water quality within the estuary. Measurement of chlorophyll a will be used to determine impacts to the primary productivity within the area.

77. Although the National Marine Fisheries Service has concurred with our determination that populations of endangered/threatened species under their purview would not be adversely affected by the implementation of modified Plan A, they have expressed concern that the use of thin-layer disposal on a broad scale may result in "major disruptions of sea turtle habitat, and that the recovery of endangered and threatened sea turtles might be jeopardized" (NMFS letter dated May 25, 1989). Much of the information to be collected during the demonstration program will be appropriate to providing evidence relative to the level of impacts which may occur to these species with the use of this technique.

78. In addition to the placement of the new work material, approximately 4,000,000 cubic yards of maintenance material would be removed from the existing channel immediately prior to construction and placed in approved open water disposal areas adjacent to the channel. The impacts associated with the disposal of this maintenance material have been determined to be acceptable and in the public interest (open water sites have been utilized on a recurring basis with certification required on 5-year intervals. Last certification was obtained August 1989). The deposition of this material in combination with the 8.8 million cubic yards of new work material poses questions as to the cumulative impacts which would result from these two actions in combination. As described in paragraph 71 we are unable to assess the impacts associated with the placement of the new work material and in a like vein we are unable to assess the possibilities of cumulative impacts.

79. As required by Section 404(b)(1) of the Clean Water Act of 1977, guidelines have been developed which are applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States. "Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern" (40 CFR 230.1[c]). Section 230.12 reads, in part: Findings of compliance or non-compliance with the restrictions on discharge. (a) On the basis of these Guidelines the proposed disposal sites for the discharge of dredged or fill material must be: ... (3) Specified as failing to comply with

(the requirements of these Guidelines where: (i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or ... (iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or (iv) There does not exist sufficient information to make a reasonable judgement as to whether the proposed discharge will comply with these Guidelines.

80. In addition Section 230.10(b) reads, in part: No discharge of dredged or fill material shall be permitted if it: (1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard. On July 17, 1985, Water Quality Criteria for Intrastate, Interstate, and Coastal Waters for the State of Mississippi were adopted. Section 2 (Minimum Conditions Applicable to all Waters) Part 3 of these criteria state: Waters shall be free from materials attributable to municipal, industrial, agricultural, or other discharges producing color, odor, or other conditions in such degree as to create a nuisance. Specifically, the turbidity outside the limits of a 750-foot mixing zone shall not exceed the background turbidity at the time of discharge by more than 50 Nephelometric Turbidity Units (NTUS). An exemption may be granted in cases of emergency to protect the public health and welfare.

(81. Although direct information is lacking to predict whether the State turbidity standard would be violated, a number of factors suggest that compliance could not be attained. Included are the nature of the material - virgin material; the nature of the operation - splash plate with above water discharge; the length of time to complete construction - 10 to 12 months; and the physical oceanographic characteristics of the area - physically confined, shallow depths, dominance of meteorological factors in determining circulation.

(82. Information presented in a U.S. Army Corps of Engineers Dredged Material Research Program technical report entitled "Prediction and Control of Dredged Material Dispersion Around Dredging and Open-Water Pipeline Disposal Operations" (T.R. DS-78-13) indicates that the nature, degree, and extent of dredged material dispersion is controlled by many factors, including: the characteristics of the dredged material, the nature of the dredging operation, and the hydrologic regime in the vicinity of the operation. It has been determined that the current practice of open water placement of maintenance material from the Gulfport channels meets the State turbidity standard. This is due to a number of reasons including:

a. maintenance material is very fine grained and very high in water content (i.e. low solids concentration);

b. maintenance operation is performed utilizing a pipeline dredge with submerged discharge. This equipment typically produces low surface water column turbidity;

c. maintenance operation is classified as a "walking job", taking less than 3 months to complete.

83. As described in paragraph 78 above the proposed new work disposal action differs significantly in all three of these areas. Based on these differences and in the absence of specific data, it has been determined that this activity combined with the proposed maintenance activity would result in cumulative impacts to turbidity which would likely be in violation of the state standard.

84. The application of turbidity control measures, such as silt screens, in an effort to meet the state standards has been determined to be impractical due to the nature of the operation and the hydrographic aspects of the area. During a thin-layer disposal operation the dredged material is forced against a splash plate. In addition the barge carrying the splash plate is rotated in a 280° arc about specified points within the disposal area. The barge is also moved between points after specific periods of time. This results in a number of overlapping arcs of dredged material being placed within the disposal area. To attempt to contain the turbidity generated by such an operation would be extremely difficult due to the continual movement of the point of discharge, the required size of the disposal sites, and the nature of the estuarine system. The western Mississippi Sound estuarine system is hydrographically dominated by freshwater inflows and atmospheric conditions. Of particular concern when considering utilizing silt screens is the response of the system to winds. Attempts to utilize these measures at Apalachicola Bay, Florida (a similar system) were only marginally effective. For the above reasons, turbidity control measures for the total thin-layer disposal plan at Gulfport would be ineffective in bringing turbidity to levels that would consistently comply with state standards.

85. Although similar in a number of aspects, the physical environments of the Mississippi Sound and the region of the Environmental Protection Agency (EPA) designated Gulfport Ocean Dredged Material Disposal Sites (ODMDS) is sufficiently different to result in different levels of impacts due to the disposal of dredged material. Of these depth, constricted nature of the proposed sites, the dilution potential and the value of existing resources are the most significant.

Parameter	Mississippi Sound ²	Gulfport ODMDS ³
Depth Range	7 - 18 feet	20 - 31 feet
Confinement	Semi-confined	Non-confined
Dilution Potential	Low - Moderate	High
Biological Resources		
Fisheries	High	High ⁴
Endangered Species	⁵	No impact

In addition, monitoring studies on the Gulfport ODMDSs have indicated that the historical use of these sites for both new work and maintenance material has not resulted in unacceptable adverse effects on the marine ecosystem. In 1986, the EPA determined that the future use of these sites for the deposition of dredged material meeting the criteria established in the MPRSA was acceptable and did not represent a significant threat to human use of the marine environment. Based on this information the determination has been made that the proposed ocean disposal will present:

- a. No unacceptable adverse effects on human health and no significant damage to the resources of the marine environment;
- b. No unacceptable adverse effect on the marine ecosystem;
- c. No unacceptable adverse persistent or permanent effects from the dumping of the particular volumes or concentrations of these materials; and
- d. No unacceptable adverse effect on the ocean for other uses as a result of direct environmental impact.

² Disposal sites specified under Clear Water Act Section 404(b)(1).

³ Disposal sites designated under Marine Protection Research and Sanctuaries Act Section 102. Transport of material evaluated under Section 103.

⁴ Although fisheries usage is high, the ODMDS represent only a small portion of nearshore fisheries areas in northern Gulf of Mexico.

⁵ National Marine Fisheries Service has indicated thin-layer disposal may result in impacts to endangered sea turtles.

86. Because of the inability to comply with the Section 404(b)(1) Guidelines and the determination that the use of the EPA designated ODMDSSs would result in no unacceptable adverse effects on human health, the marine environment or its uses, we have determined that the alternative which would place approximately 8,854,200 cubic yards of new work material in a thin-layer in Mississippi Sound is unacceptable and therefore not implementable as required by Principle and Guidelines. For this reason the full thin-layer alternative plan cannot be the NED plan. The provisions of Plan 5 were modified to include the directives of the WRDA of 1988, and designated as the NED plan.

87. Disposal of maintenance material from the Gulfport Harbor project has historically utilized open water areas along both sides of the channel alignment within the Mississippi Sound. Numerous investigations have indicated that these actions have not resulted in significant effects to the estuarine environment. Maintenance quantities from the proposed improvements are expected to increase by only 10 percent, therefore the impacts resulting from the disposal of this material would not be significantly different from those currently occurring with the existing project. Due to the nature of the maintenance material dredged from the Gulfport Channel, fine grained material very high in water content, a thin-layer placement is normally achieved during maintenance of the existing project. Therefore, utilization of a thin-layer disposal option for the future maintenance of the improved channel would be implementable and thus part of an NED plan. As in the existing case, state certification of the open water disposal areas within Mississippi Sound will be required and will be reevaluated on a five year basis.

88. The WRDA of 1986 mandates gulf disposal of all the material to be dredged from the Gulfport Channel. The WRDA of 1988, however, modified the authorization and directed implementation of a thin-layer demonstration program. In carrying out the mandate in the WRDA of 1988, a plan which would thin-layer approximately 1 million cubic yards of new work dredged material in Mississippi Sound was developed by the Secretary of the Army's study team. The remainder of the new work material would be disposed in the Gulf of Mexico. In addition, as required by the WRDA of 1988, the impacts associated with thin-layer disposal of maintenance material in Mississippi Sound will be investigated during the thin-layer demonstration program. Based on the results of the demonstration program, a plan for the future maintenance of the Gulfport Channel will be developed in consultation with the study team. At this time, it is projected that

maintenance material from the Mississippi Sound channel segment will continue to be thin-layered in Mississippi Sound.

89. Project Physical Features - The physical features of the recommended plan (NED Plan) include:

a. Reducing the turning basin width from 1,320 feet to 1,120 feet over most of its length, and to 1,110 in the northern portion.

b. Constructing the northern portion at a 32-foot depth for about 900 feet in length, and the southern portion at a 36-foot depth for about 4,200 feet in length.

c. Removing an old breakwater, which contains about 4,400 cubic yards of stone, from the entrance to the turning basin.

d. Deepening the Mississippi Sound channel segment to 36 feet at the existing width of 220 feet.

e. Relocating Ship Island Pass channel segment approximately 1,900 feet west of the present alignment, and reconstructing the channel segment to a depth of 38 feet at the existing width of 300 feet.

f. Deepening the Gulf channel segment to 38 feet at the existing width of 300 feet.

g. New work dredged material totaling about 8,854,200 cubic yards (excludes 1,457,000 cubic yards for port expansion by the Port Authority) will be removed from the turning basin and the Mississippi Sound channel segment. Of this total, 1,000,000 cubic yards will be thin-layered in Mississippi Sound, and 7,857,200 cubic yards will be placed in the EPA-designated ocean disposal sites in the Gulf of Mexico south of Gulfport.

h. New work dredged material which will be removed from the Ship Island Pass channel segment, totaling 2,589,700 cubic yards of sandy material will be placed in the littoral zone southeast of Cat Island. Some of this material may be utilized for beach nourishment at Fort Massachusetts at the request of the National Park Service.

i. New work dredged material which will be removed from the gulf channel segment, totaling 3,052,600 cubic yards, will be placed in the EPA designated ocean disposal sites in the Gulf of Mexico.

j. Implementation of the thin-layer disposal demonstration program.

k. Maintenance dredging of the project will follow existing practice, including the use of open water sites within the Mississippi Sound, the littoral zone site southeast of Cat Island, the beach nourishment site at Fort Massachusetts, and the EPA-designated ocean disposal sites at Gulfport.

l. Improvement to the system of navigation aids.

90. Navigation Aids -- The recommended improvements to the existing Federal project at Gulfport Harbor will result in the establishment of 3 (8x26) lighted bouys, 1 range front light, and 1 range rear light; Relocation of 7 (8x26) lighted bouys, 6 (6x20) lighted bouys, and 1 range front light; discontinuance of 7 (6x20) lighted bouys, 1 (2CR) unlighted bouy, 1 (2NR) unlighted bouy, and 1 leading light. The present channel segment at Ship Island Pass will remain in use until the new channel segment is constructed. An estimate for aids to navigation totaling \$132,000 for the project first cost, and no annual maintenance cost has been received from the Coast Guard (see Exhibit B at the end of this report). The Coast Guard's estimate of no increased maintenance cost for the aids to navigation results from the relocated channel segment through Ship Island Pass, which provides for a much straighter channel and requires fewer aids to navigation. Coordination has been maintained with the 8th U. S. Coast Guard District, New Orleans, Louisiana; the U.S. Coast Guard Marine Safety Officer, Mobile, Alabama; and Commander, Group Mobile, Mobile, Alabama.

91. In August 1988, during plan reformulation for the project modification at Gulfport Harbor, the United States Department of Interior, National Park Service - Gulf Islands National Seashore (National Seashore) requested that renourishment of the shoreline adjacent to Fort Massachusetts on west Ship Island be considered, along with other disposal alternatives. The shoreline at west Ship Island has been renourished with the sandy maintenance material dredged from the Ship Island Pass channel segment on 3 previous occasions. For each of these renourishment efforts, the Department of the Interior paid the incremental cost above the routine maintenance cost normally experienced to dispose of the dredged material in Mississippi Sound. Renourishment of the south shoreline (Mississippi Sound side) was last accomplished in 1983, at which time 210,000 cubic yards of dredged material were placed

on the shore at a cost to the National Park Service of \$28,500.

92. Under the with-project condition, the maintenance material quantities and maintenance cycles will be reduced as the realigned channel will be moved 1,900 feet to the west. The existing alignment will thus trap material moving generally westwardly and result in reduced maintenance dredging quantities for the first four years of the new project life. With reduced maintenance quantities of beach quality sand from the Ship Island Pass Channel, the Corps may not have the opportunity to offer the National Park Service the option of using this sand to reduce the erosion at Fort Massachusetts. The National Park Service has budgeted FY 1990 funds to perform a study to determine the best permanent solution for the erosion problems being experienced at Fort Massachusetts. The Park Service believes the existing channel alignment to be contributing to the erosion problem and that through allowing the old channel alignment to fill with sand from the littoral system that the Fort may see reduced erosion, but this is yet to be established. The Mobile District will continue to coordinate with the National Park Service on the size and scope of the considered project, and the potential effects it could have on Fort Massachusetts. They will be fully informed of the implications of the new channel alignment as it relates to reduced dredging quantities during the initial years of the improved project at Gulfport.

93. Construction Procedure - Due to the pre-disposal monitoring requirements of the thin-layer demonstration test, construction of the gulf channel segment will be initiated first. Concurrently, the Chevron pipeline relocation will be relocated at the new Ship Island Pass channel segment. Construction of the Ship Island Pass reach will be initiated upon completion of the pipeline relocation. Upon completion of the pre-disposal monitoring for the Mississippi Sound channel segment, construction will be initiated per the conditions of the thin-layer demonstration test. The turning basin will be constructed as a last order of work to allow ample time for stabilizing the wharves within the turning basin and completion of the Port Authority's port expansion work. The material removed from the gulf channel segment will be taken to the gulf disposal site, whereas, the material from Ship Island Pass channel segment will be placed in the littoral zone near the 18-foot contour in the Gulf of Mexico near Cat Island (see Plate 4). One million cubic yards of new work material dredged from the Mississippi Sound channel segment and the turning basin will be excavated by hydraulic pipeline dredge and thin-layered in Mississippi Sound. The

remainder of the new work dredged material will be transported to the gulf disposal sites in dump scows.

94. Dredge Plant Rates - The plant rates used in the preparation of the dredging cost estimate were derived from OCE approved plant rates which have been updated and revised to include labor and fuel rates. The production rates of the plant were derived from historic and computed data for dredges working on the same project or in similar projects with equivalent materials.

95. Cost Data - The costs presented in this GDM were prepared based on October 1989 price levels and the authorized interest rate of 8 7/8%. The initial unit costs for dredging were estimated without profit, and therefore, 10% was added for estimated profit when the final cost estimates were prepared. For comparison of the most reasonable alternative plans, a summary estimate of project first costs for the Thin-Layer Disposal Plan, the Gulf Disposal Plan, and the NED Plan (which is our recommended plan of improvement) is provided in Table 6. Table 7 provides an estimate of the annual economic costs and benefits, and the benefit-to-cost ratios for the NED plan. The NED Plan is also displayed with consideration of cost sharing provisions of the WRDA of 1988. The allocation of costs between the Federal Government and the non-Federal sponsor for implementation of the NED plan is provided in Table 8. Additional detailed information on the alternative plans can be found in Exhibit C (Project Cost Appendix) at the end of this main report.

96. Cost Appendix - In accordance with the guidance provided in EC 1110-2-538 (Civil Works Project Cost Estimating - Code of Accounts), a detailed cost estimate of the NED plan was prepared and is also provided in Exhibit C.

97. Project Maintenance - Operation and maintenance of the existing Federal project at Gulfport Harbor, Mississippi, results in open water disposal of approximately 3 million cubic yards of dredged material annually. If the Gulf Disposal Plan for dredged material as authorized by the WRDA of 1986 were implemented, disposal costs for annual maintenance of the existing Federal project would increase about 6.5 million dollars. Implementation of the NED plan, however, incrementally increases maintenance dredging costs by about \$642,000. The Mississippi Sound, and Ship Island Pass channel segments will be maintained every 12 to 18 months. Maintenance of the gulf channel segment, however, will be required annually, and will be generally scheduled during the same time frame as Mobile Harbor and Pascagoula Harbor to save on mobilization and demobilization costs. The project improvement is estimated to increase the annual dredged material quantities by 768,030 cubic yards. Disposal of the

TABLE 6
COMPARISON OF ALTERNATIVE PLANS
OCTOBER 1989 PRICE LEVEL, 8 7/8% INTEREST
(FINANCIAL COSTS)

ITEMS	THIN LAYER	GULF PLAN	NED PLAN
FIRST COST			
GENERAL NAV FEATURES			
DREDGING:			
T.L. Dredging	\$0	\$0	\$580,000
Mississippi Sound	\$5,135,000	\$20,453,000	\$18,143,000
Mob & Demob	\$79,000	\$512,000	\$512,000
Breakwater Removal	\$43,000	\$43,000	\$43,000
Monitoring Demo Test	\$0	\$0	\$2,753,000 ^{1/}
Ship Island Pass	\$1,502,000	\$3,289,000	\$3,289,000
Bar Channel	\$3,022,000	\$3,022,000	\$3,022,000
Mob & Demob	\$165,000	\$165,000	\$165,000
Subtotal	\$9,946,000	\$27,484,000	\$28,507,000
Contingencies	\$4,422,586	\$4,422,586	\$4,422,586
Planning, Engineering & Design	\$2,406,071	\$2,406,071	\$2,406,071
Construction Management	\$1,245,061	\$1,245,061	\$1,245,061
Navigation Aids (USCG)	\$132,000	\$132,000	\$132,000
Subtotal	\$8,205,718	\$8,205,718	\$8,205,718
TOTAL GNF FIRST COST	\$18,151,718	\$35,689,718	\$36,712,718 ^{2/}
LERRD:			
Labor - LCA/Realestate	\$18,200	\$18,200	\$18,200
Temporary Easement	\$1,000	\$1,000	\$1,000
Dredging Berthing Areas	\$90,000	\$357,000	\$90,000
Wharf Stabilizing ^{3/}	\$2,100,000	\$2,100,000	\$2,100,000
Pipeline Relocation	\$2,313,750	\$2,313,750	\$2,313,750
Engineering & Design	\$39,000	\$39,000	\$39,000
Construction Management	\$82,000	\$82,000	\$82,000
Contingency	\$226,470	\$226,470	\$226,470
TOTAL LERRD FIRST COST	\$4,870,420	\$5,137,420	\$4,870,420
TOTAL PROJECT FIRST COST (Financial)	\$23,022,138	\$40,827,138	\$41,583,138 ^{1/}
TOTAL PROJECT FIRST COST (Economic)	\$23,022,138	\$40,827,138	\$38,583,138 ^{2/}

^{1/} Includes \$1,110,000 O&M Funds Required for O&M Monitoring.

^{2/} Excludes \$3,000,000 of of Thin-Layer Monitoring Costs Which are Excluded From Benefit-to-Cost Ratio Calculation, and Designation of the NED Plan.

^{3/} Not Creditable Toward Non-Federal Cost Share (See Table 8).
Construction Period, 1 Aug 92 - 1 Mar 95.

TABLE 7

ANNUAL ECONOMIC COSTS AND BENEFITS
OCTOBER 1989 PRICE LEVEL, 8 7/8 % INTERES
NED PLAN - AUGUST 1992 CONSTRUCTION START

=====	
FEDERAL FINANCIAL COST	\$36,712,718
NON-ECONOMIC FIRST COST (WRDA 88))	-3,000,000 ^{1/}

FEDERAL ECONOMIC FIRST COST	\$33,712,718
FEDERAL INTEREST DURING CONSTRUCTION	\$4,054,000

TOTAL FEDERAL ECONOMIC PROJECT COST	\$37,766,718
NON-FEDERAL FINANCIAL COST	\$4,870,420
NON-ECONOMIC FIRST COST	0

NON-FEDERAL ECONOMIC FIRST COST	\$4,870,420
NON-FEDERAL INTEREST DURING CONSTRUCTION	358,000

TOTAL NON-FEDERAL ECONOMIC PROJECT COST	\$5,228,420
FEDERAL ANNUAL CHARGES:	
FEDERAL NET INVESTMENT	\$37,766,718
INTEREST AND AMORTIZATION	\$3,400,000
ANNUAL O&M	642,000

TOTAL FEDERAL ANNUAL CHARGES	\$4,042,000
NON-FEDERAL ANNUAL CHARGES:	
NET NON-FEDERAL INVESTMENT	\$5,228,420
INTEREST AND AMORTIZATION	\$471,000
ANNUAL O&M	15,000

TOTAL NON-FEDERAL ANNUAL CHARGES	\$486,000
TOTAL ANNUAL CHARGES	\$4,528,000
TOTAL AVERAGE ANNUAL BENEFITS	\$4,936,900
BENEFIT-TO-COST RATIO	1.09
NET BENEFITS	\$408,900
BCR With Additional Benefits for Gulf Disposal.	1.51 to 1
^{1/} Monitoring Costs are Excluded From B/C Analysis Per WRDA 1988.	
Construction Period, 1 Aug 92 - 1 Mar 95.	
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TABLE 8

ALLOCATION OF PROJECT FIRST COSTS
OCTOBER 1989 PRICE LEVEL, 8 7/8 % INTEREST
NED PLAN

ITEM	ESTIMATED COST
TOTAL FEDERAL FINANCIAL FIRST COST (GNF)	\$36,712,718
O&M COSTS TO MONITOR O&M MATERIAL	-1,110,000 ^{1/}
AIDS TO NAVIGATION	-132,000 ^{1/}
GENERAL NAVIGATION FEATURE COST	\$35,470,718
LERRD:	
LERRD CREDITABLE ITEMS:	
RELOCATE CHEVRON CRUDE OIL PIPELINE	\$2,313,750
DESIGN SUPPORT ON PIPELINE RELOCATION	39,000
QUALITY ASSURANCE & INSPECTIONS - PIPELINE	82,000
LCA EFFORTS ON REALESTATE AND PIPELINE	19,200
CONTINGENCIES	208,470
Subtotal	\$2,662,420
OTHER NON-FEDERAL PROJECT COSTS:	
WHARF STABILIZATION	\$2,100,000 ^{2/}
DREDGING BERTHING AREAS	108,000 ^{2/}
Subtotal	\$2,208,000
NON-FED. SHARE GENERAL NAVIGATION FEATURES (25%)	\$8,867,677
ADDITIONAL COST SHARING REQUIREMENT (10% GNF)	3,547,072
CREDIT FOR LERRD	-2,662,420
Subtotal (Project cost share)	\$9,752,329
TOTAL NON-FEDERAL PROJECT COSTS	\$14,622,749
SUMMARY:	
TOTAL FEDERAL PROJECT COST	\$26,910,389
TOTAL NON-FEDERAL PROJECT COST	14,622,749 ^{3/}
TOTAL PROJECT COST	\$41,538,138

^{1/} 100% Fed. project costs, not cost-shared with local sponsor.

^{2/} 100% non-Fed. project costs, not cost-shared with Federal Gov.

^{3/} Includes \$9,752,329 in project cost sharing.

maintenance material will be accomplished using the same disposal techniques, and disposal locations as discussed in the project construction procedure.

98. Schedule for Design and Construction - Construction of the project would be accomplished by contract and is estimated to take about 30 months. The funding schedule for the project, provided on Table 9, accounts for inflation through the period of construction. The schedule (CPM) for design and construction of the project is provided on Plate 11.

99. Comparison of Costs - The Federal cost for construction of the Gulfport Harbor navigation improvements reported in the 1985 Supplemental Authorization Act was \$40,930,000. The latest approved estimate based on October 1989 price levels is \$26,867,000. The decrease of \$14,063,000 is based on a decrease of \$12,300,000 for implementing the current cost sharing policy, a decrease of \$10,176,000 is based on implementing a channel 36 feet deep by 220 feet wide in Mississippi Sound, 38 feet deep by 300 feet wide in Ship Island Pass, and 38 feet deep by 300 feet wide in the Gulf of Mexico in lieu of the dimensions in the authorized plan, and a decrease of \$26,207,000 is due to a reevaluation of unit prices. The decrease was partially offset by an increase of \$29,000,000 for taking the dredged material to the Gulf of Mexico, as required by the WRDA of 1986, and an increase of \$5,620,000 for inflation.

100. The non-Federal cost for project construction in the 1985 Supplemental Authorization Act was \$180,000. The latest approved estimate based on October 1989 price levels is \$12,726,000. The increase of \$12,546,000 is based on an increase of \$12,300,000 for implementing the current cost sharing policy; and an increase of \$9,670,000 for taking the dredged material to the Gulf of Mexico. The increase was partially offset by a decrease of \$4,345,000 based on implementing a channel 36 feet deep by 220 feet wide in Mississippi Sound, 38 feet deep by 300 feet wide in Ship Island Pass, and 38 feet deep by 300 feet wide in the Gulf of Mexico in lieu of the dimensions in the authorized plan, and a decrease of \$5,079,000 based on a reevaluation of unit prices.

101. The current Federal cost estimate is \$26,735,000, which is a decrease of \$132,000 from the latest approved estimate of \$26,867,000. The decrease is based primarily on cost sharing the dredging that was designated as a cost to the Navy and considered to be a 100% Federal cost in the previous report. The current estimate allocates the cost (previously designated to the Navy) as 75% Federal and 25% non-Federal.

TABLE 9

PLANNING, CONSTRUCTION, AND FUNDING SCHEDULE - NED PLAN
FEDERAL AND NON-FEDERAL FIRST COST
(Oct 89 Prices Inflated Through the Period of Construction)

NATURE OF WORK	FISCAL YEAR WORK SCHEDULE									
	TOTAL COST (\$000)	PREVIOUS COSTS	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995		
FEATURES TO BE COST SHAPED:										
DEMONSTRATION TEST	750	0	0	0	100	650	0	0		
DEMONSTRATION MONITORING	2,160	0	0	0	100	760	700	600		
CHANNELS & TURNING BASIN	32,705	0	0	0	590	13,140	13,850	5,125		
PLANNING ENGINEERING & DESIGN	2,472	1,826	300	168	50	50	50	28		
CONSTRUCTION MANAGEMENT	1,498	136	0	0	100	400	400	462		
TOTAL (GN) COST SHAPED FEATURE	39,585	1,962	300	168	940	15,000	15,000	6,215		
NAVIGATION AIDS	153	0	0	0	0	0	0	153		
FEDERAL COST SHARE (GNF)	29,689	1,962	300	168	100	11,250	11,250	4,659		
NON-FEDERAL COST SHARE (GNF)	9,896	0	0	0	840	3,750	3,750	1,556		
LCR/REAL ESTATE	0	23	0	0	23	0	0	0		
TEMPORARY EASEMENT	0	1	0	0	1	0	0	0		
BERTHING AREA REEQUIPPING	0	122	0	0	0	122	0	0		
WHARF STABILIZATION	0	2323	0	0	0	2000	373	0		
PIPELINE RELOCATION	0	2594	0	0	0	2000	594	0		
PLANNING, ENGINEERING & DESIGN	0	40	0	0	35	5	0	0		
CONSTRUCTION MANAGEMENT	0	337	0	0	0	300	37	0		
TOTAL PROJECT FIRST COST	45,228	1,962	300	168	999	19,427	16,004	6,368		
TOTAL FEDERAL FIRST COST	(29,842)	(1,962)	(300)	(168)	(100)	(11,250)	(11,250)	(4,812)		
CORPS OF ENGINEERS	29,689	1,962	300	168	100	11,250	11,250	4,659		
U.S. COAST GUARD	153	0	0	0	0	0	0	153		
TOTAL NON-FEDERAL FIRST COST (15,386)	(0)	(0)	(0)	(0)	(899)	(8,177)	(4,754)	(1,556)		
Local sponsors share of E&D costs are included in 1st year of construction.										

102. The current non-Federal cost estimate is \$13,738,000, which is an increase of \$1,012,000 over the latest approved estimate of \$12,726,000. This increase is based on the addition of construction management, and contingencies for the non-Federal features of the considered project.

103. Economic Analysis - The objective of the economic analysis in this GDM was to update the analysis presented in the 1976 feasibility report by developing a current estimate of the transportation savings and other benefits which would accrue to the proposed modification of Gulfport Harbor. Recent changes in the market structure of the commerce handled by Gulfport Harbor, as well as the detailed planning and engineering of the proposed project, indicate the need for a current analysis of the expected benefits which would result from the considered project modification.

104. The primary imported commodities which would benefit from a deepened channel are fruit and general products (containers), and ilmenite ore (bulk). The primary exported commodities to benefit from a deepened channel are scrap metal and fishmeal (both bulk), and general products (containers). The commodity mix at this harbor has changed significantly since the 1976 report. Iron and steel plates have been eliminated, and containerized fruit and general cargo have been added. Change has also occurred in the volume of containerized products (50 percent of total tonnage in 1986). All of these changes necessitated a reevaluation of the transportation savings, especially since 70 percent of the 1986 tonnage was moved in much larger vessels with a maximum drafts ranging from 32 to 38 feet, which are being lightloaded in order to use the port.

105. The planning setting for this analysis contains the following set of assumptions and constraints:

a. The project period of analysis is 50 years from the base year (1995), using October 1989 prices and a Federal interest rate of 8 7/8 percent.

b. The existing nominal 30- by 220-foot ship channel segment in Mississippi Sound is authorized to be improved to 36 feet by 300 feet.

106. Future without-project commodity tonnage projections were based upon plant expansions under construction in 1986 coupled with modification of the BEA projections shown in the

1976 report. Projections used in the 1976 report were modified as follows:

a. Exported scrap metal has increased 1,000 percent in the 10-year period 1976 to 1986; therefore the projections in the 1976 report of 284 percent were considered reasonable.

b. Imported ilmenite ore tonnage projections were 422 percent for the without-project period in the 1976 report. Plant expansion and efficiencies have increased production by 60 percent in the period 1976 to 1986, which consumed a large portion of the 1976 projections. Growth for the period of 1995-2045 is projected to be 200 percent based on company data.

c. Imported fishmeal (fertilizer) remained at the same projection of tonnage as in the 1976 report.

d. Imported containerized fresh and canned fruit was not in the 1976 analysis, but has increased 30 percent in the 1976-1986 period. Increases in consumption rates of fresh fruit in the Southeastern states coupled with projected population increases (BEA) predicted a minimal 200 percent increase in these imports for the period 1995-2045.

e. Exported and imported containerized general cargo was not in the 1976 analysis, but has increased to 150,000 tons in the 3 year period 1983 to 1986. Port officials have improved their "feeder port" status and have projected a 200 percent increase in tonnage for the period 1995-2045.

f. The fleet size is not expected to increase over the project economic life. The existing vessels calling at the port in 1986 were projected to be more fully loaded in the period 1995-2045 under the with-project condition.

107. Methodology - Several variations from the 1976 report methodology have been incorporated into this analysis, primarily in the area of vessel operating costs and characteristics. These changes include the following:

a. The usual allowance for underkeel clearance for a safe transit of the Gulfport Harbor channel has been eliminated based on the actual operating characteristics of the Gulfport fleet. The soft bottom does not present a navigational hazard, and vessels operating at Gulfport routinely load to the 30-foot project channel depth.

b. The fleet composition was based only on vessels calling at the port under existing conditions which are also expected to operate in the future.

c. Current vessel operating costs for FY 1990, as provided by Department of Army Economic Guidance Memorandum dated 15 September 1989, were incorporated in the analysis.

d. Empty backhaul rates were included in the vessel voyage costs for all dry bulk carriers based on research by Mobile District Office on other harbor deepening projects in the district. One-way mileage of a voyage was multiplied by 1.8 to compensate for dry bulk carriers being loaded 60 percent to/from Gulfport and only 40 percent on the return trip.

e. The hourly operating costs for the modified bulk carrier (conbulker) transporting ilmenite ore from Australia were adjusted for the extra freeboard from the 1100-1300 containers aboard the vessel. Costs for a 28,000 dwt containership were substituted.

108. The benefit analysis of deepening the channel and providing other navigation improvements at Gulfport Harbor contained in this GDM complies with the procedures delineated in the Principles and Guidelines. The benefit analysis for this GDM was based on identification of the transportation cost savings which could be achieved by the improved project. The procedures outlined in the Principles and Guidelines consist of the following:

a. Projection of with-project and without-project commodity movements through the port of Gulfport.

b. Projection of the vessel fleets which would use the existing and the improved channel.

c. Projection of transportation costs associated with the existing project and the proposed improvements.

d. Projection of transportation benefits over the project life using the data generated in the preceding projections.

109. Comparison of the commodity specific transportation costs of the improved project with those of the without-project condition, defines the NED benefits attributable to the improvement. Impacts on other ports were not analyzed since essentially no commodities were diverted

from other ports. A Gulfport scrap metal exporter left Gulfport and went to New Orleans because of inadequate channel depth, but would return to Gulfport with a 36-foot channel depth.

110. Summary of Project Economics - The total projected tonnages of commerce expected to move through the Port of Gulfport over the period 1995-2045 with a 36-foot channel depth are shown in Table 10. In addition to the transportation benefits generated by more fully loading vessels, other transportation savings will accrue from reduction of vessel delays with the improved channel alignment and bend widening, which affords the vessels a safer passage through the barrier islands, and modifying the turning basin so that ship and tugs inefficiencies can be eliminated. The average annual equivalent transportation savings for each commodity and for the project improvement are shown in Table 11. A more detailed analysis of the project economics is provided in Appendix A, Economic Analysis.

TABLE 10
With-Project Tonnages by Decades for Project Life, 1995-2045
Gulfport Harbor
(rounded)

Commodities	1995	2005	2015	2025	2035	2045
Ilmenite Ore	260,700	295,500	339,500	390,200	448,400	515,200
Ilmenite Ore	118,400	134,200	154,200	177,200	203,600	234,000
Scrap Metal	365,300	440,800	543,100	663,300	824,700	1,016,200
Fishmeal	42,300	47,900	55,100	63,300	72,700	83,600
Fresh Fruit (container)	390,800	442,900	509,000	584,900	672,200	772,400
General (container)	181,700	206,000	236,700	272,000	312,500	359,200
Total	1,359,200	1,567,300	1,837,600	2,156,900	2,534,100	2,980,600

Table 11

Average Annual Equivalent Transportation Benefits
(1 October 1989 Prices, 8 7/8% Interest)
Gulfport Harbor (\$1,000)

=====			
BENEFIT	(Project Life - 1995-2045)		
<u>CATEGORY</u>	CHANNEL DEPTHS		
=====			
<u>TRANSPORTATION BENEFITS:</u>	<u>32 feet</u>	<u>34 feet</u>	<u>36 feet</u>
<u>Depth Related:</u>			
Better Vessel Utilization	1,696.8	2,529.3	3,666.6 ⁶
<u>Other Benefits:</u>			
a. Reduction of Transit Times (Naval Hydrographic Sonar)	0	253.1	253.1
b. Reduced Vessel Delays (Awaiting High Tide)	0	16.2	16.2
c. Reduced Port Handling Charges on 3,000 Containers	0	150.0	150.0
<u>Bend Related:</u>			
Reduced Vessel Transit Times Due to Widening Needs at 3 Bends	98.8	116.6	116.6
<u>Turning Basin:</u>	<u>734.4</u>	<u>734.4</u>	<u>734.4</u>
TOTALS	2,530.0	3,799.6	4,936.9

⁶ There are no additional benefits for a 38-foot channel.

111. Statement of Findings - The documents concerning this proposed action and the stated views of other interested agencies and the concerned public have been reviewed and evaluated, with regard to the public good, relative to the project recommended in the Chief of Engineers Report dated January 1978, and modifications thereto to provide an efficient and effective navigation channel at the Port of Gulfport. The possible consequences of these modifications have been studied with consideration given to environmental impacts, social well being, economic effects, and engineering feasibility. In evaluation, the following points were considered pertinent:

a. The project will contribute to efficient utilization of vessels calling at the Port of Gulfport.

b. The project design avoids certain environmental impacts, minimizes adverse environmental effects, where possible, and enhances certain ecological values.

c. The project will contribute to the operational efficiency of the Port of Gulfport by providing an improved turning basin.

d. The recommended plan is supported by the local sponsor.

e. The project will be adequate to meet the existing as well as future commercial navigation needs and it is economically justified with a benefit-to cost-ratio of 1.09 to 1. When the additional benefits for transporting the dredged material to the Gulf of Mexico, as authorized by Congress, are added to the National Economic Development Account, the benefit-to-cost ratio becomes 1.51 to 1.

112. Conclusions - In review of all pertinent information and considering the effects of modifying the Gulfport Harbor project, I conclude that:

a. All practical alternatives have been examined in arriving at a recommended plan.

b. Adverse environmental impacts of the recommended plan and the alternative plans have been considered and addressed in the EIS.

c. The recommended plan is consistent with national policy, statutes, and administrative directives.

d. The recommended plan best serves the public interest.

113. Recommendation - I recommend that incremental construction of the authorized plan of improvement for the existing Federal navigation project at Gulfport Harbor, Mississippi, be initiated subject to such additional modifications as the Chief of Engineers may deem appropriate, to provide for:

a. Reducing the turning basin width from 1,320 feet to 1,120 feet over a majority of its length. Constructing the northern portion of the turning basin at a 1,110-foot width, and a 32-foot depth for about 900 feet in length. Constructing the southern portion of the turning basin at a 36-foot depth, and a 1,120-foot width for about 4,200 feet in length.

b. Removing an old breakwater from the entrance to the turning basin.

c. Constructing the Mississippi Sound channel segment to 36 feet at the existing width of 220 feet for a distance of 10.38 miles.

d. Relocating Ship Island Pass channel segment approximately 1,900 feet west of the present alignment, and reconstructing the channel segment to a depth of 38 feet at the existing width of 300 feet, for a distance of 2.64 miles.

e. Deepening the Gulf channel segment to 38 feet at the existing width of 300 feet, for a distance of 6.8 miles.

f. Provision of navigation aids which include: relocating 13 lighted buoys and 1 range front light. Establishing 3 lighted buoys, 1 range front light, and 1 range rear light. Discontinuing 7 lighted buoys, 2 unlighted buoys, and 1 leading light.

g. Provisions for conducting the thin-layer demonstration test and the associated monitoring, as authorized by the WRDA of 1988.

I also recommend that widening the Mississippi Sound channel segment to 300 feet, and widening Ship Island Pass and the Gulf channel segments to 400 feet be deferred until such time as the navigation need of a wider channel is identified.



Larry S. Bonine
Colonel, Corps of Engineers
District Engineer

References - The primary references used in the preparation of this report in addition to the appropriate regulations include the following:

a. "Feasibility Report on Gulfport Harbor- Gulfport, Mississippi", November 1976.

b. Engineering Manuals and Regulations:

(1) EM 1110-2-1613, 8 April 1983, "Hydraulic Design of Deep Draft Navigation Projects".

(2) EM 1110-2-1607, August 1965, "Tidal Hydraulics".

(3) ER 1110-2-1150, 15 November 1984, Engineering After Feasibility Studies".

c. U.S. Army Corps of Engineers, "Planning Guidance Notebook" 30 September 1981, as amended or changed (Contains ER 1105-2-10 through 1105-2-60).

d. USACE Mobile District, Mississippi Sound and Adjacent Areas, Analysis and Synthesis of Oceanographic Conditions in Mississippi Sound, Bjorn Kjerfve of the Department of Geology, University of South Carolina, contract No. DACW01-82-Q-0022, March 1983.

e. USACE Mobile District, Mississippi Sound and Adjacent Areas Appendix C Numerical Model, June 1983.

f. Committee on Tidal Hydraulics, Report No. 3, "Evaluation of Present State of Knowledge of Factors Affecting Tidal Hydraulics and Related Phenomena", U.S. Army Corps of Engineers, May 1965.

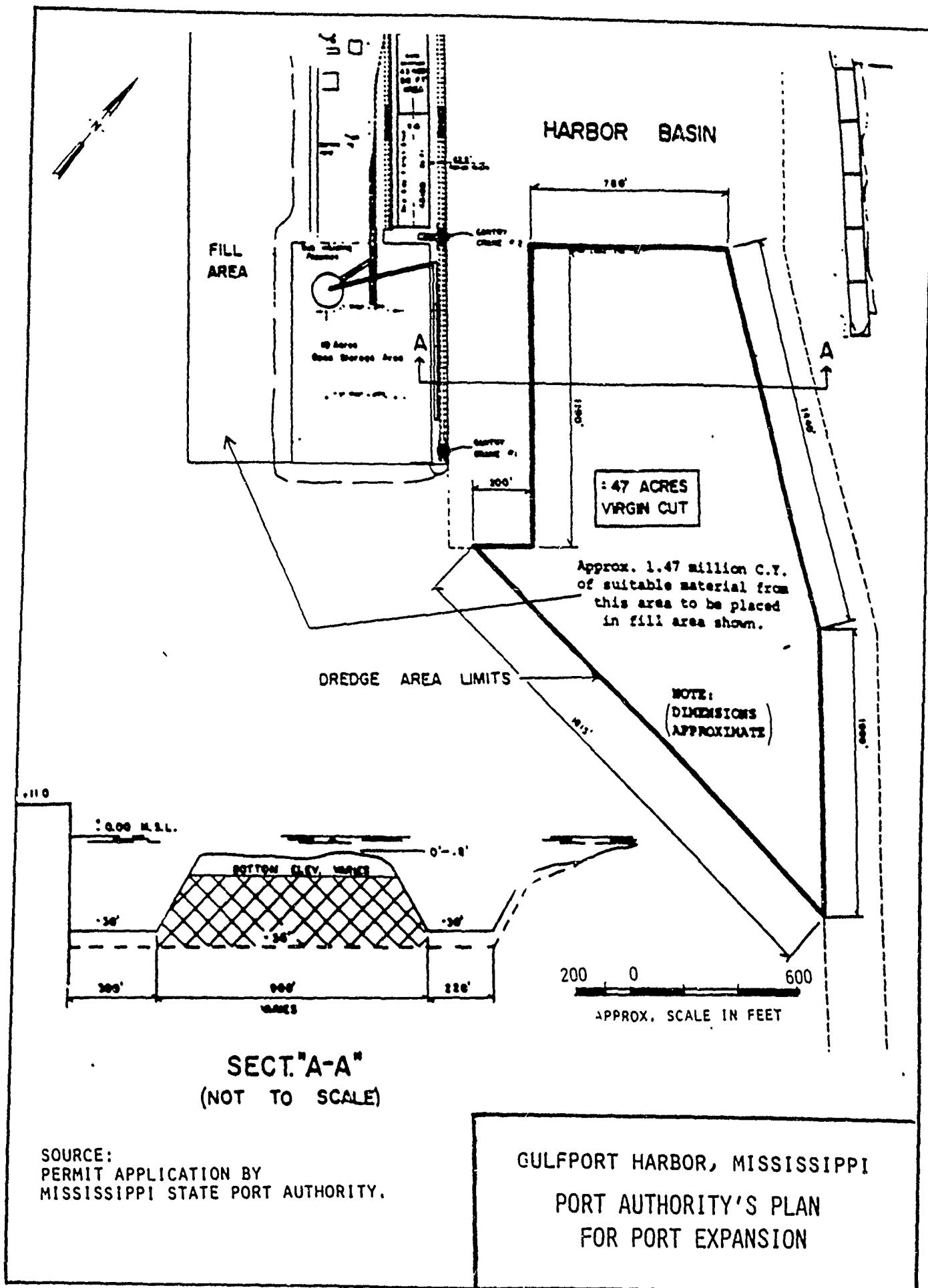
g. WES MD CERC-83-1, Prototype Tidal Data Analysis for Mississippi Sound and Adjacent Areas, Douglas G. Outlaw, September 1983.

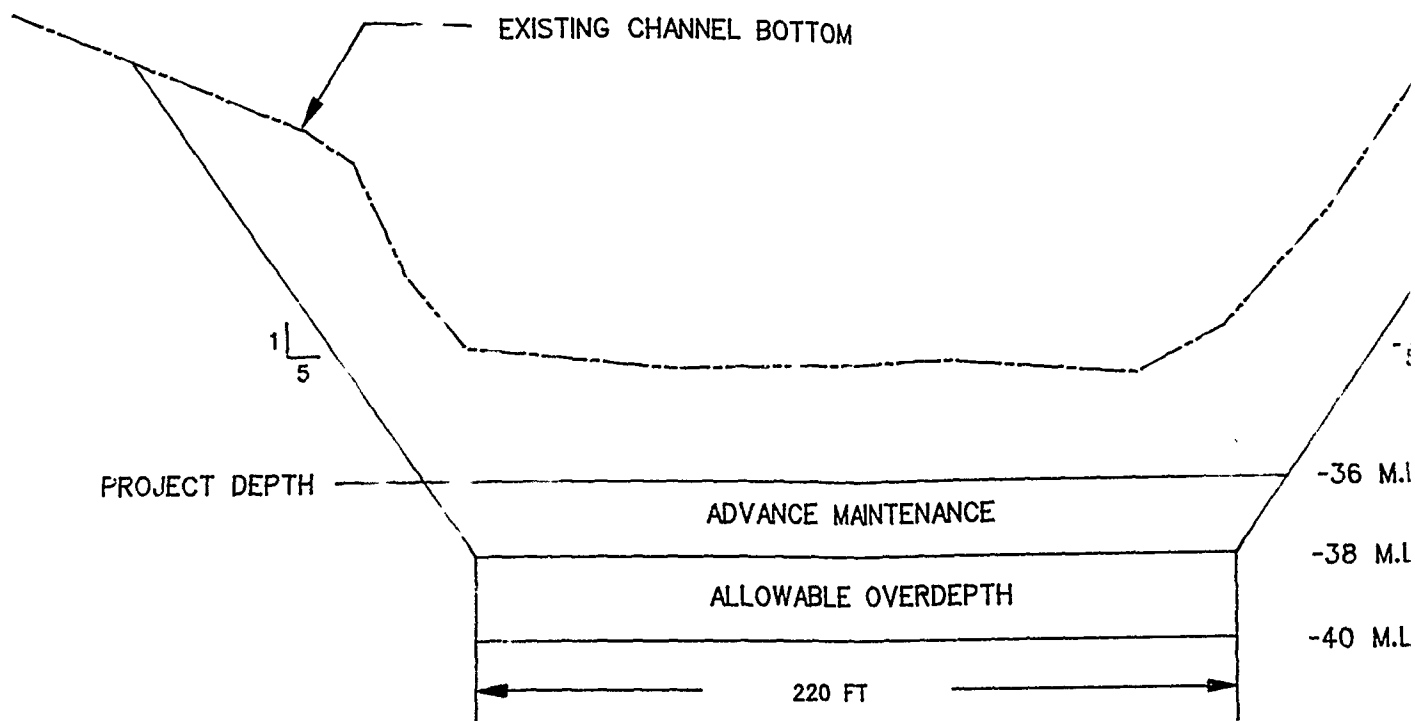
h. "Numerical Model for Astronomical Tides in the Gulf of Mexico", R.O. Reid and R.E. Whitaker, (not published) September 1981.

i. WES MP CERC-85-2 Numerical Model Investigation of Mississippi Sound and Adjacent Areas, R.A. Schmalz, February 1985.

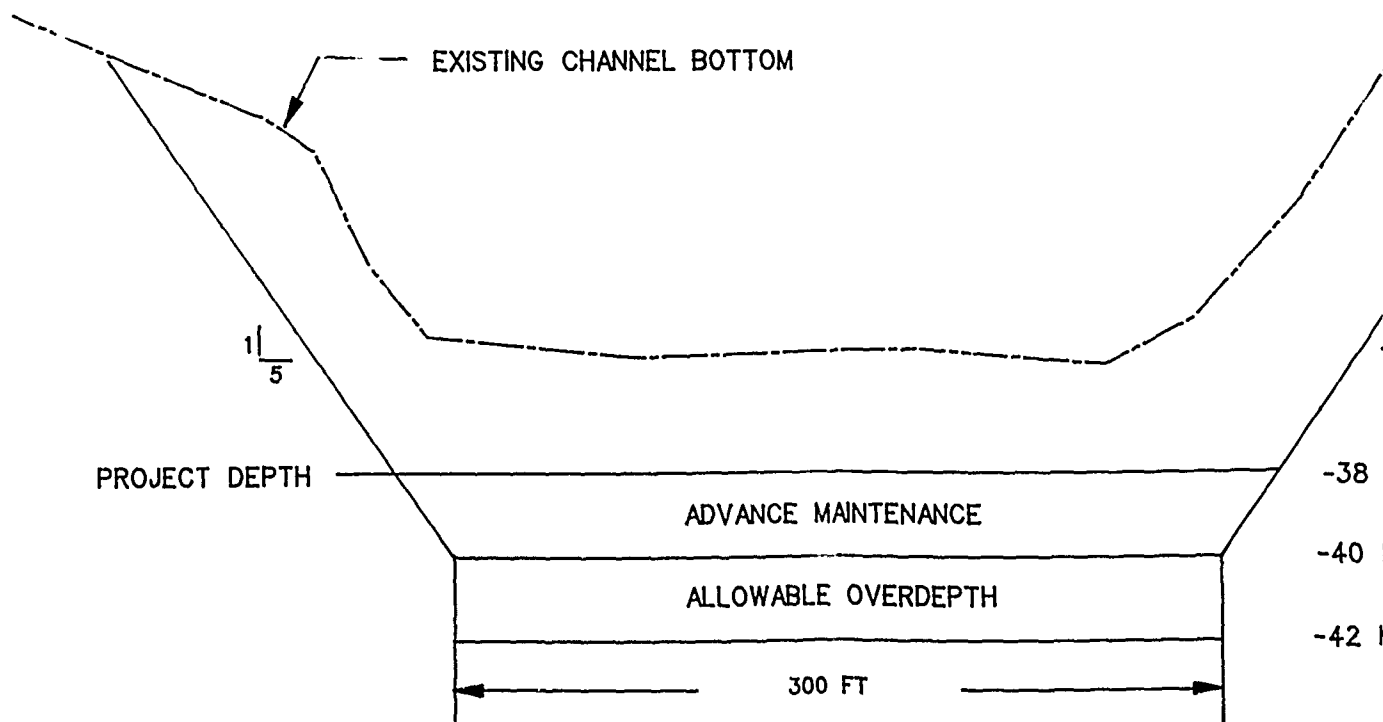
j. Mississippi Sound and Adjacent Areas Plan Formulation Report, U.S. Army Corps of Engineers, Mobile District, 1983.

k. WES TR CERC-89-1 "Geomorphic and Coastal Process Analysis for Ship Channel Planning at Ship Island, Mississippi", Stephen C. Knowles and Julie D. Rosati, February 1989.

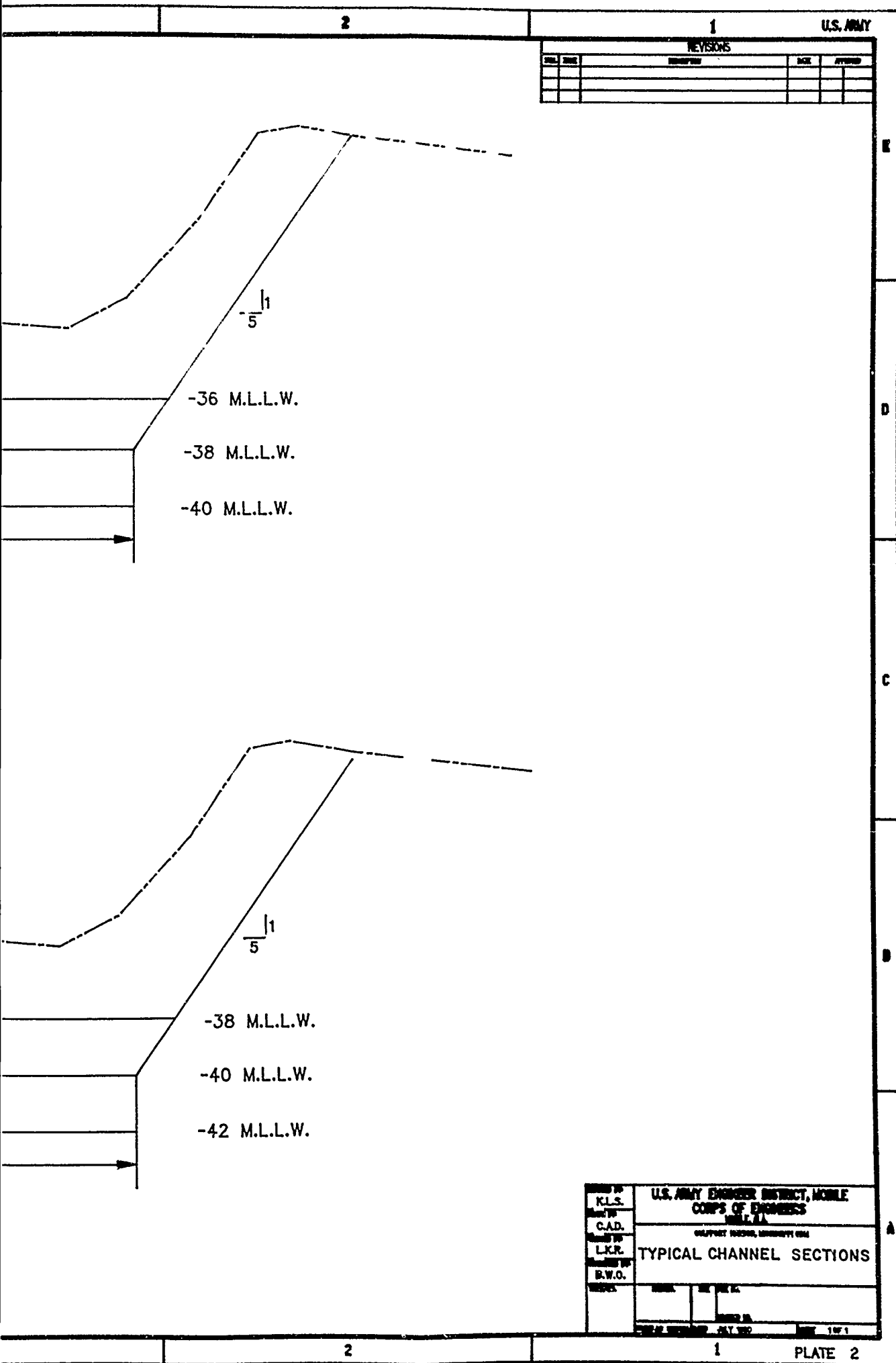


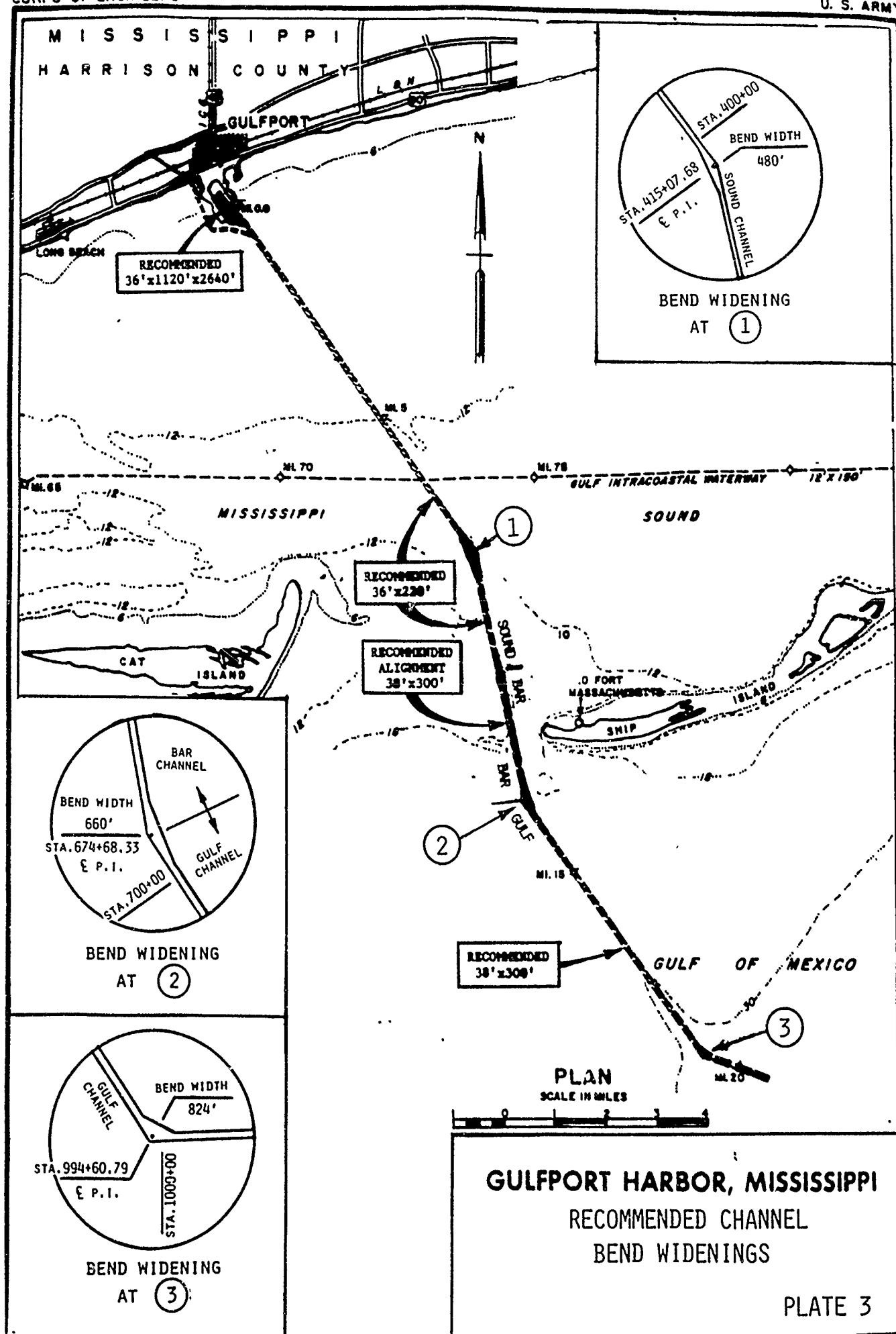


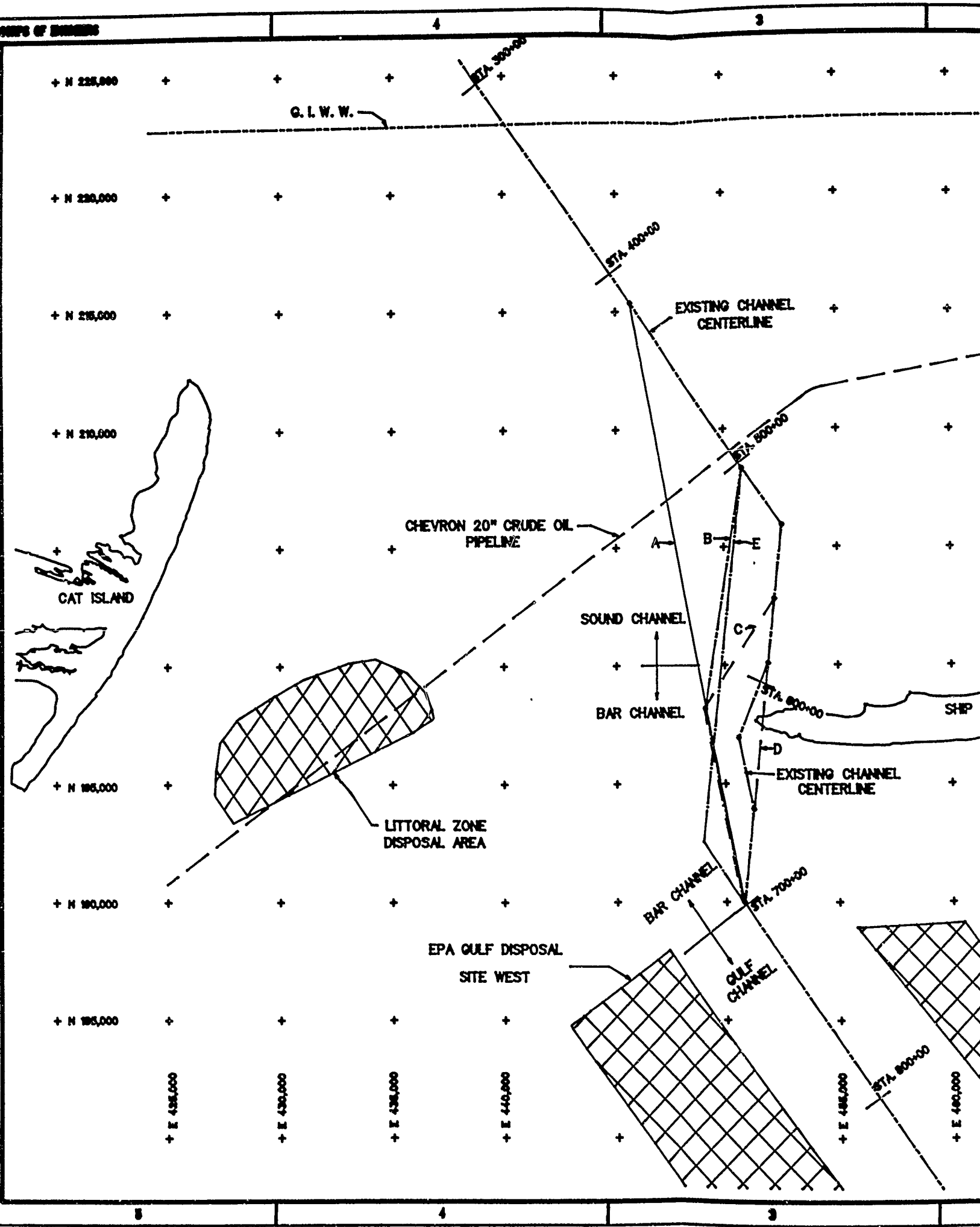
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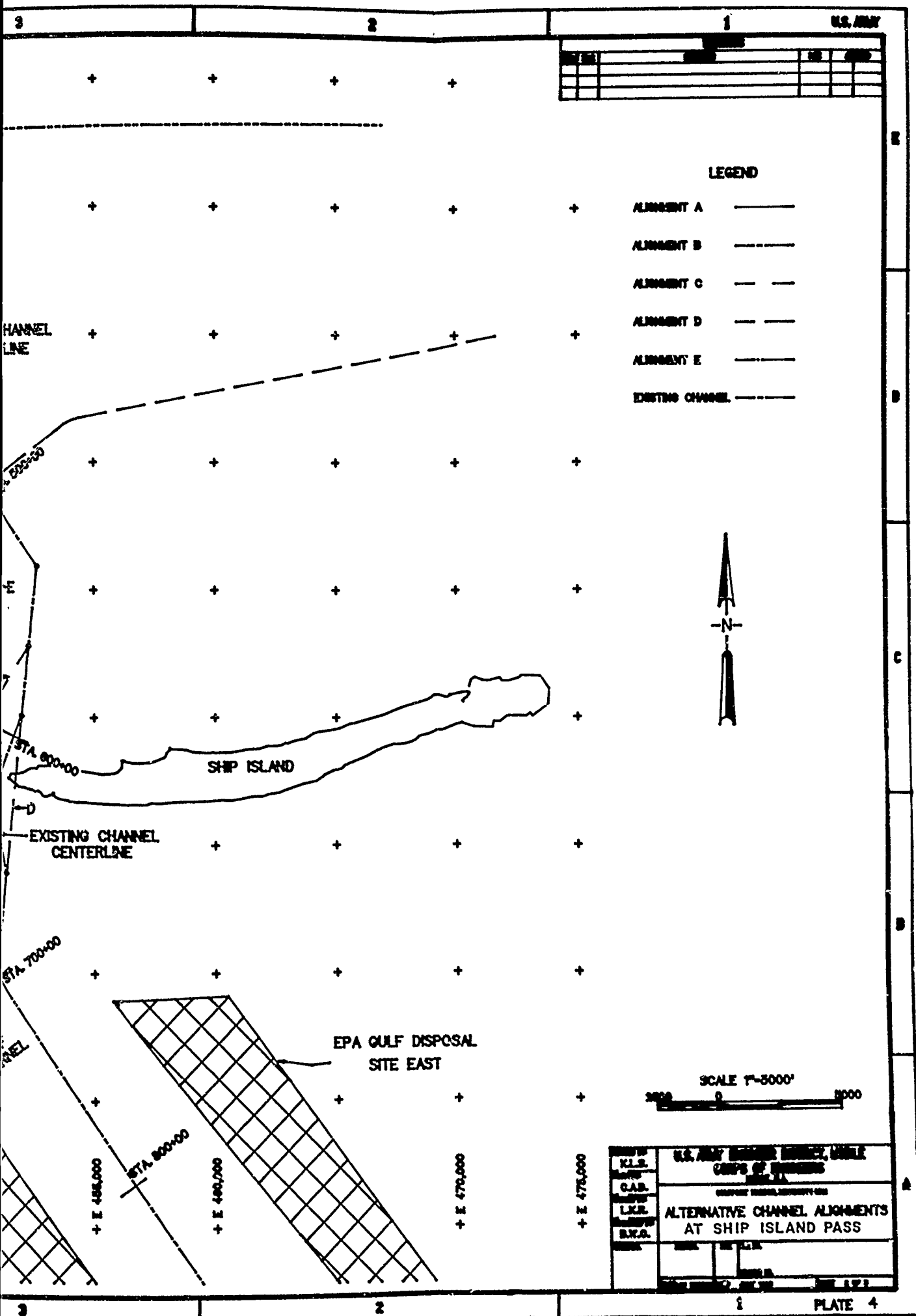


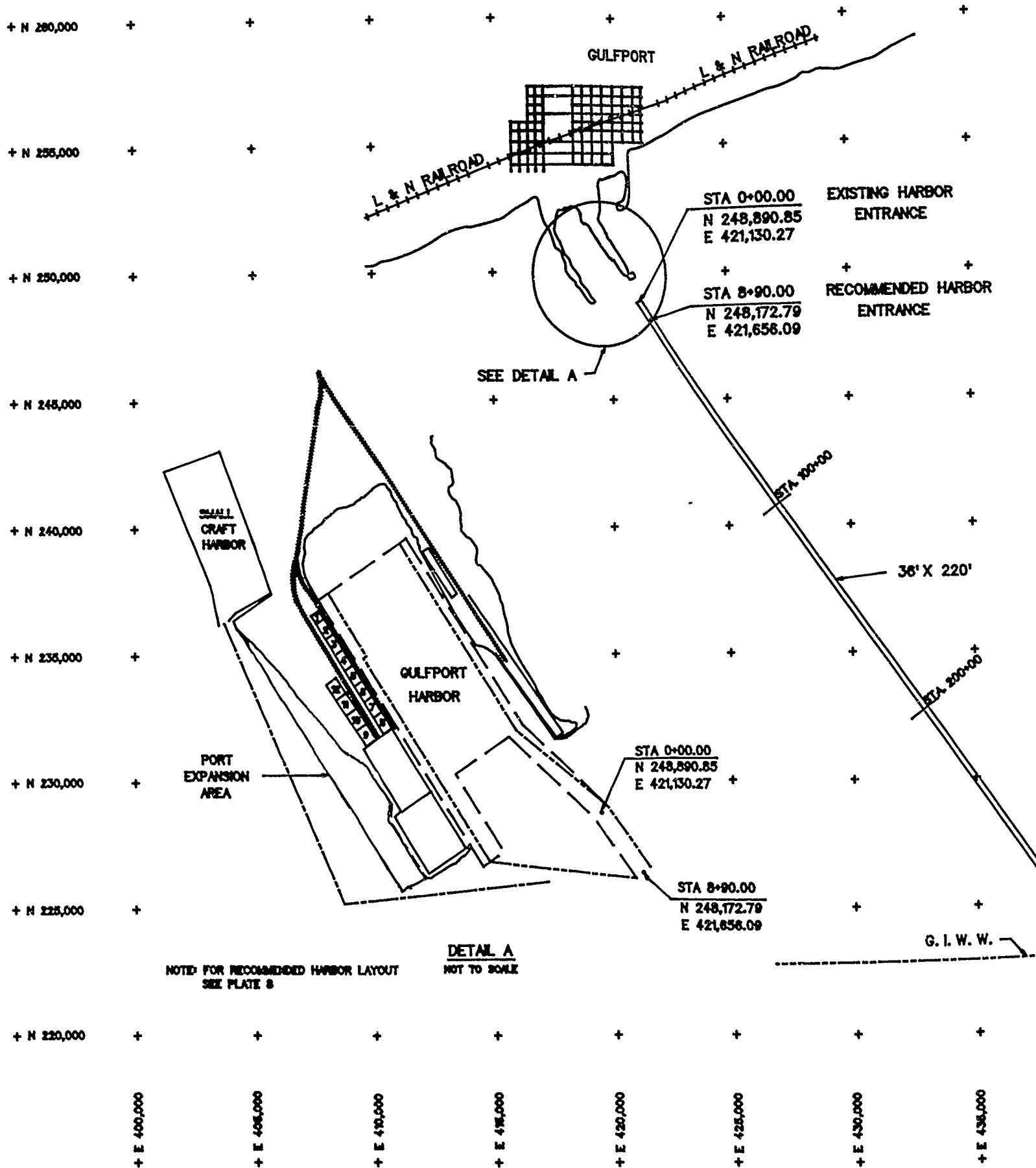
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BAR AND GULF CHANNEL
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REVISIONS

NO.	DATE	DESCRIPTION	BY	APPROVED

LEGEND

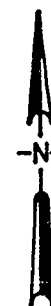
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CONFIGURATION

RECOMMENDED HARBOR
CONFIGURATION

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390.85
30.27

EXISTING HARBOR
ENTRANCE

00.00
172.79
56.09

RECOMMENDED HARBOR
ENTRANCENOTE: FOR TYPICAL SECTION
SEE PLATE 2.

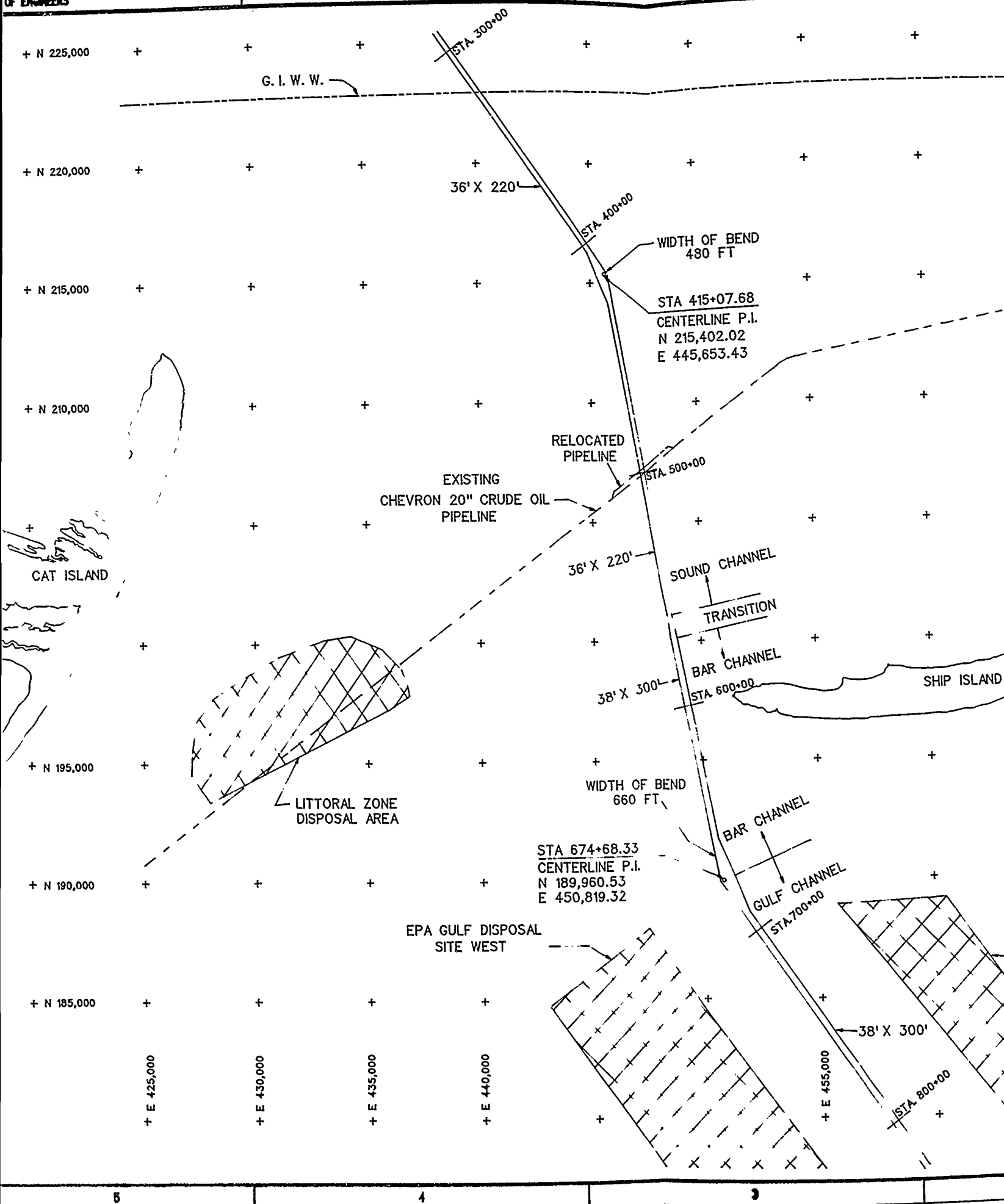
SCALE 1"=5000'

2000 0 5000

G. I. W. W.

+ E 430,000
+ E 436,000
+ E 440,000
+ E 446,000

DESIGNED BY K.L.S.	U.S. ARMY ENGINEER DISTRICT, WASH. D.C.
CHECKED BY C.A.B.	CHIEF OF ENGINEERS
APPROVED BY L.K.R.	CHIEF OF ENGINEERS
DATE B.W.O.	RECOMMENDED CHANNEL ALIGNMENT



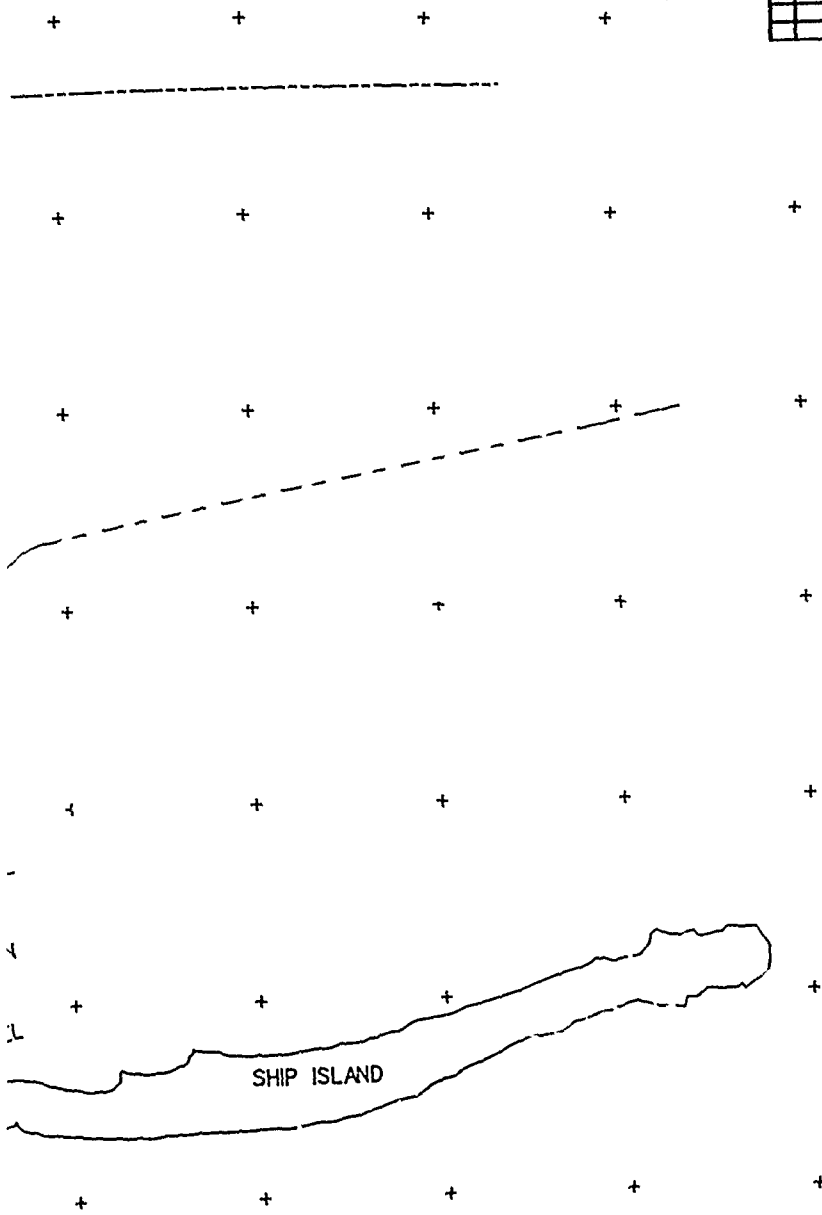
U.S. ARMY

2

1

REVISIONS

NO.	DATE	DESCRIPTION	BY	APPROVED



NOTE: FOR TYPICAL SECTIONS
SEE PLATE 2.

CHANNEL
LF CHANNEL
STA 700+00

EPA GULF DISPOSAL
SITE EAST

SCALE 1"=5000'



38' X 300'

STA 800+00

+ E 435,000

+ E 470,000

+ E 475,000

DESIGNED BY K.L.S. DRAWN BY C.A.D. CHECKED BY L.K.R. APPROVED BY B.W.O.		U.S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA. GULFPORT HARBOR, MISSISSIPPI RIVER RECOMMENDED CHANNEL ALIGNMENT AND DISPOSAL SITES	
DATE	BY	DATE	BY

PLATE 6

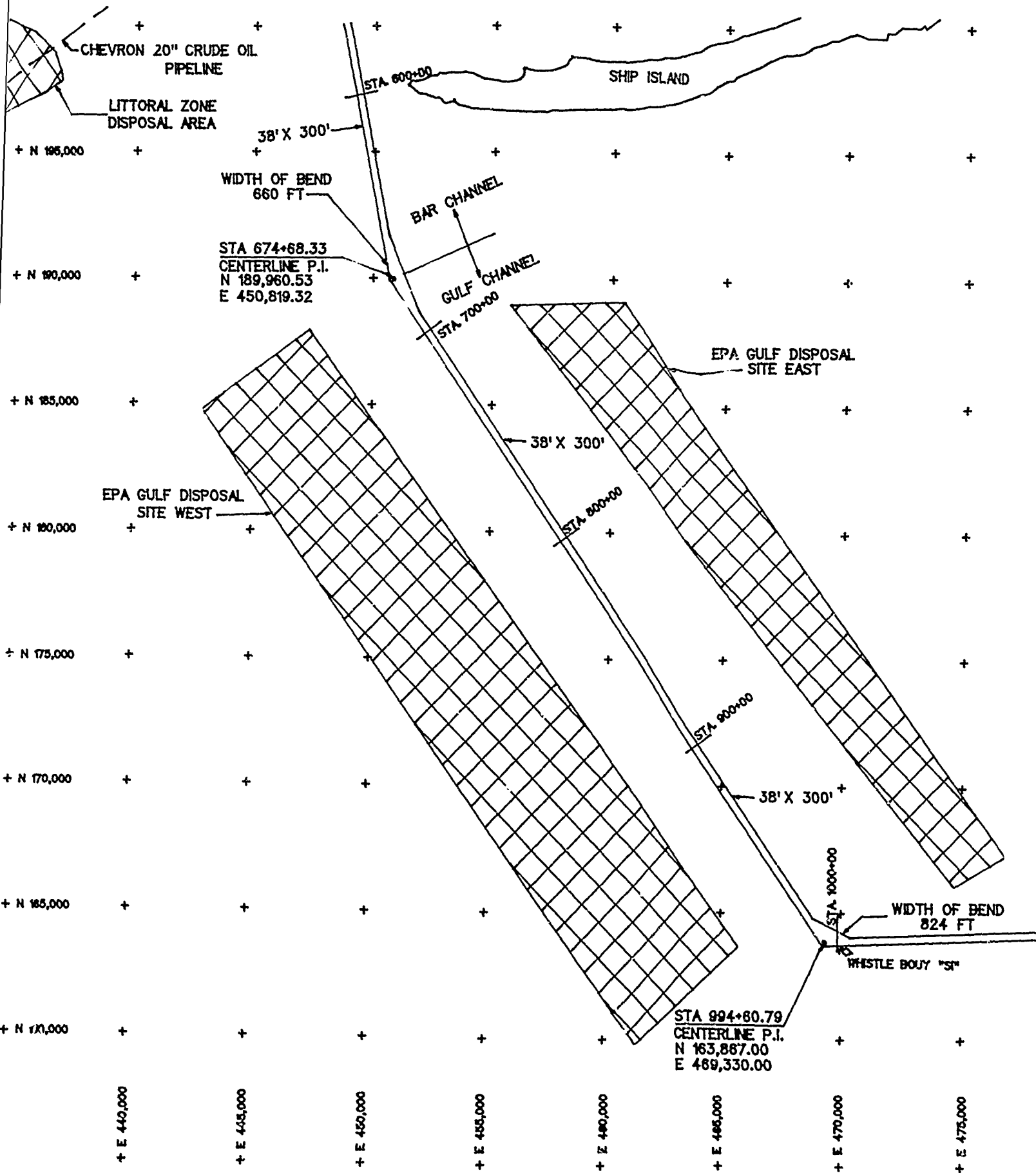
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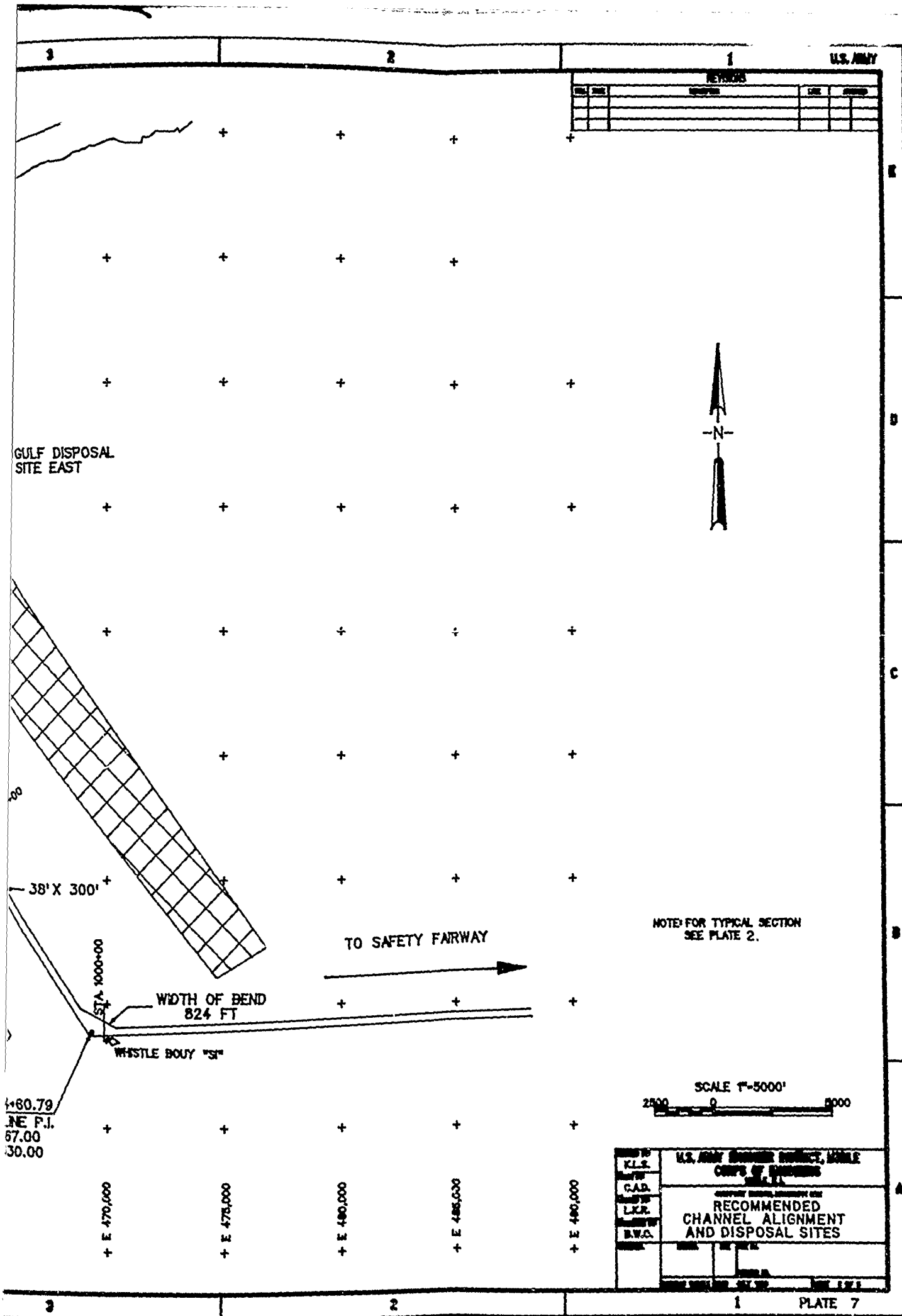
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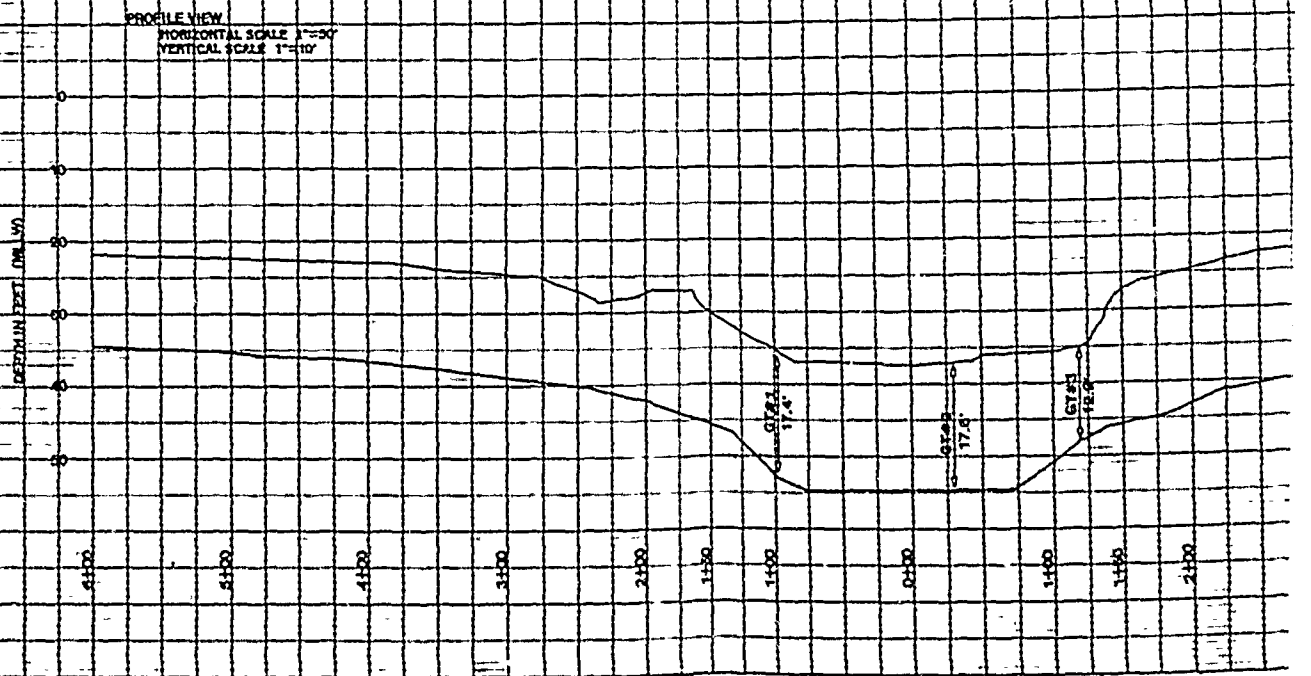
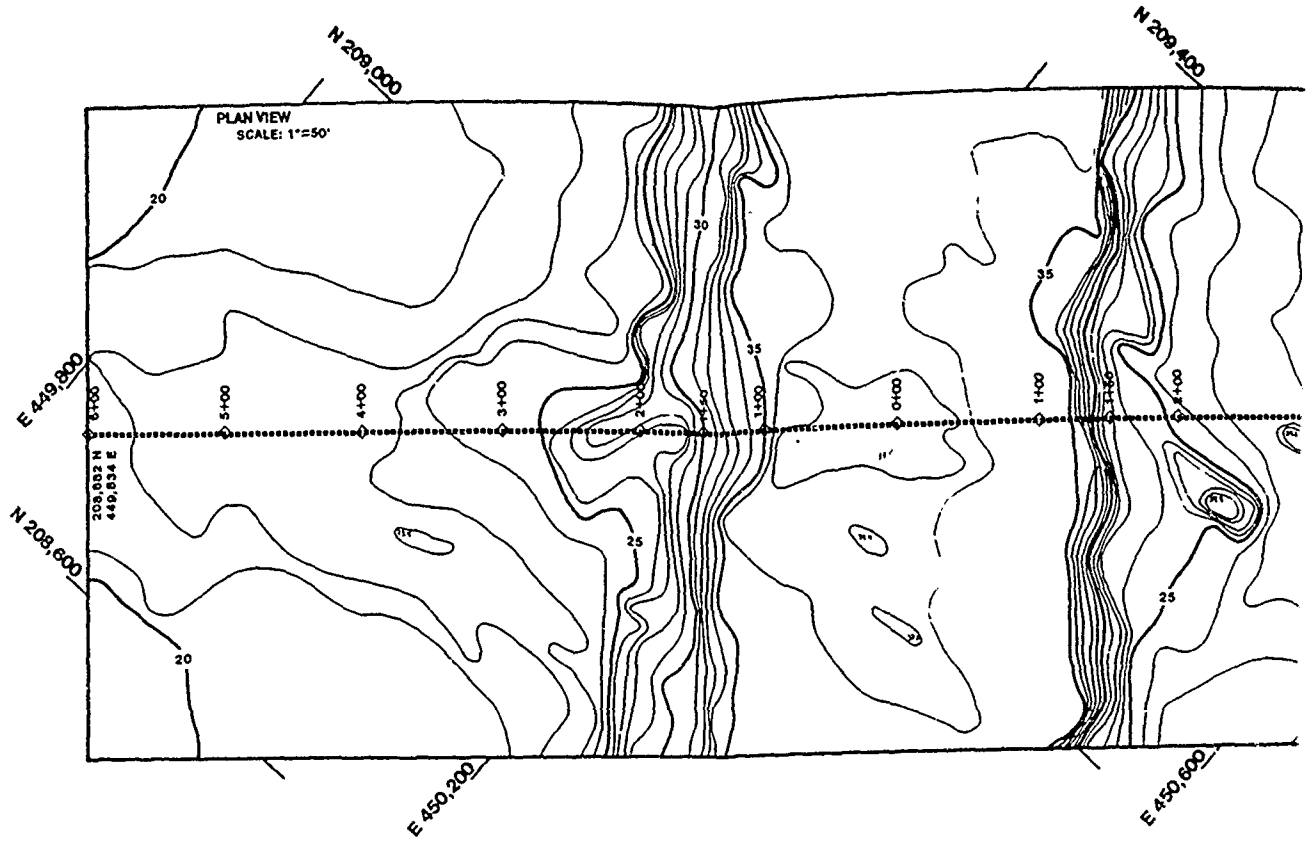
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4

3

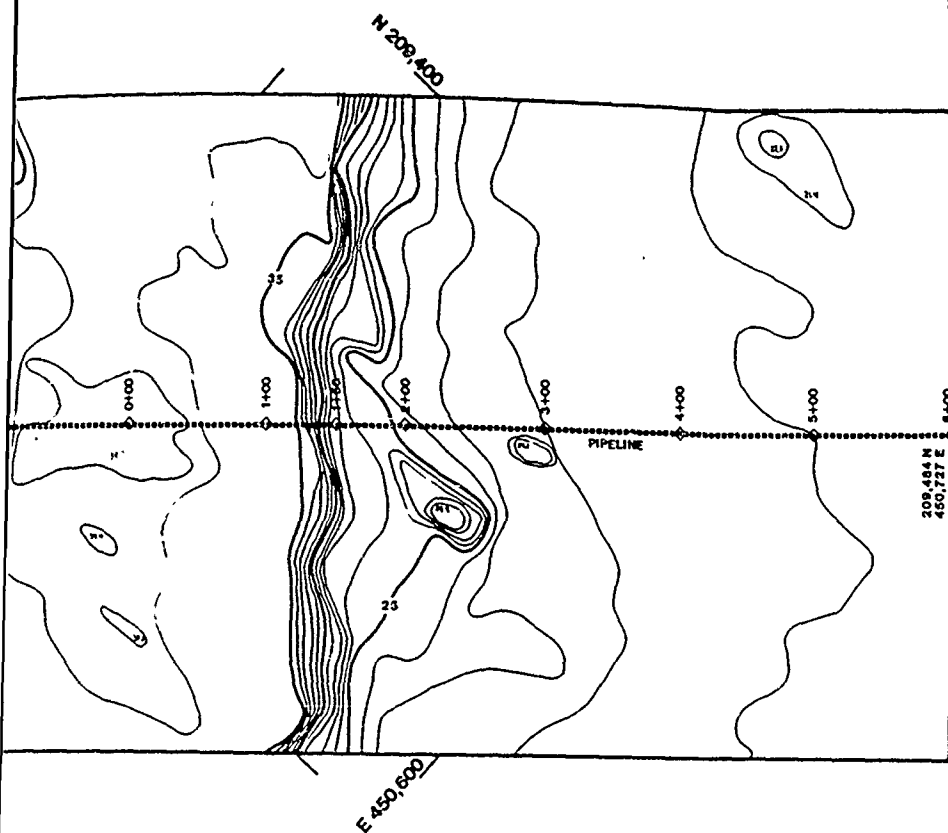






REVISIONS

REV. NO.	DESCRIPTION	DATE	APPROVED



SOUNDINGS IN FEET—VERTICAL DATUM IS MLLW
CONTOUR INTERVAL 1 FOOT

GRID BASED ON MISSISSIPPI COORDINATE SYSTEM,
EAST ZONE

SHORE STATIONS USED FOR NAVIGATION.

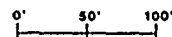
20E-1D N 251,856 S E 412,656.5

BILOXI LIGHTHOUSE (OFFSET) N 264,589.2 E 478,805.4

NGVD (1929) 0.56'

MLLW 0.00'

SCALE



DATE OF SURVEY WAS JUNE 4, 6, 8, AND 10, 1968.
GROUND TRUTH INFORMATION WAS COLLECTED ON
JUNE 23, 1968.

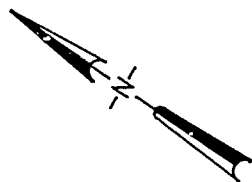
GROUND TRUTH IS BY WATER SETTING
DEPTH OF BURIAL RECORDED IS FROM SEAFLOOR
TO TOP OF PIPE.

SEAFLOOR

PIPELINE

VIEW LOOKING UP THE CHANNEL TOWARD GULFPORT
PERPENDICULAR TO THE PIPELINE

U. S. ARMY ENGINEER DISTRICT, MOBILE CORPS OF ENGINEERS MOBILE, ALA.			
GULFPORT HARBOR, MISSISSIPPI			
PLAN VIEW AND CROSS SECTION OF CHEVRON 20" CRUDE OIL PIPELINE			
DR. REF. NO.	SPCL. NO.	REV.	FILE NO.
DRAWING NO.		DATE: JUNE 1968	
SCALE: 1" = 50'		SHEET 1 OF 1	

EXISTING HARBOR
ENTRANCESTA 0+00.00
N 248,890.85
E 421,130.27100' X 950' X -32 M.L.L.W.
BERTHING AREA
NON-FEDERAL100' X 1750' X -36 M.L.L.W.
BERTHING AREA
NON-FEDERAL

1110 FT

DREDGE TO
-32 M.L.L.W.

1120 FT

DREDGE TO
-36 M.L.L.W.110' X 890' X -32 M.L.L.W.
BERTHING AREA
NON-FEDERALTRANSITION
1V ON 5H100' X 2950' X -36 M.L.L.W.
BERTHING AREA
NON-FEDERAL

RECOMMENDED HARBOR LAYOUT

NOT TO SCALE

U.S. ARMY

REVISIONS

NO.	DATE	REVISION	BY	CHKD

LEGEND

EXISTING HARBOR ———

RECOMMENDED HARBOR - - - - -

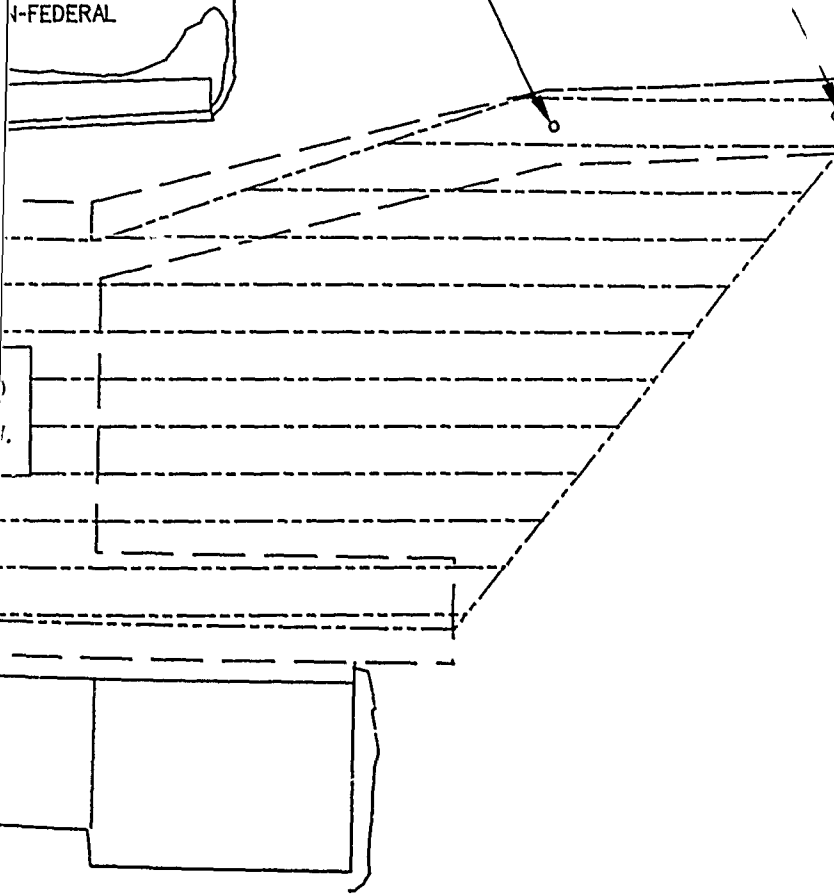
EXISTING HARBOR
ENTRANCE

RECOMMENDED HARBOR
ENTRANCE

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E 421,130.27

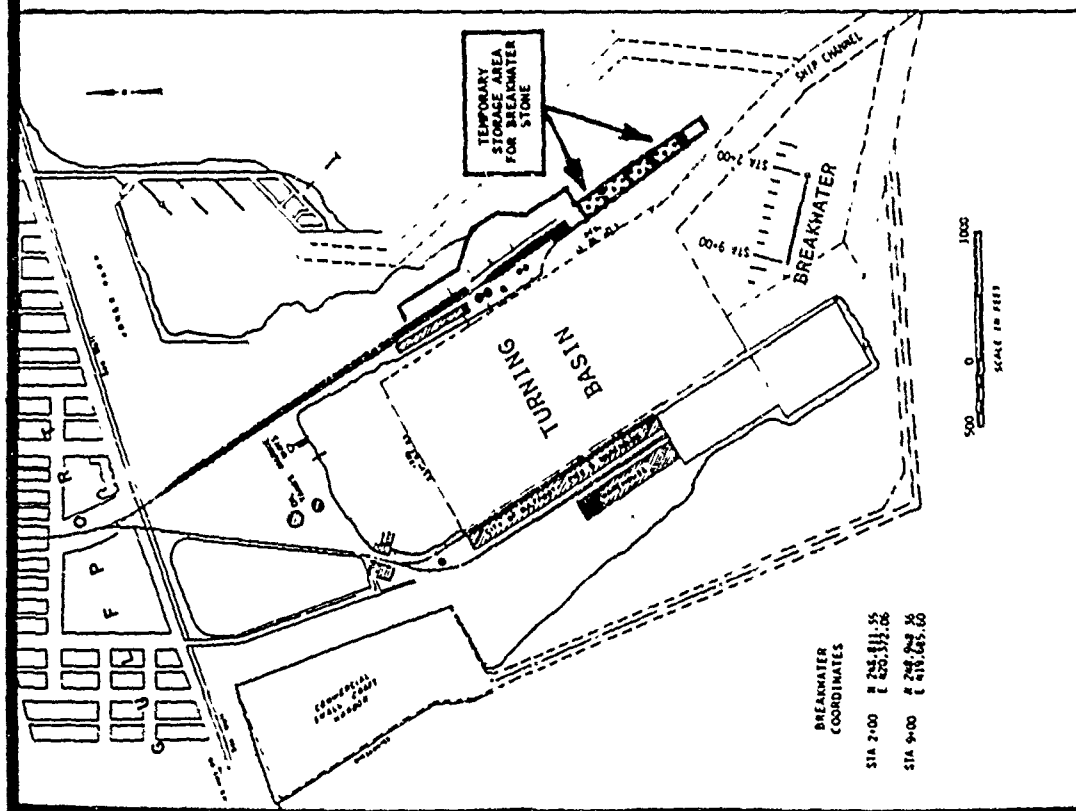
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N 248,172.79
E 421,656.09

EXISTING -36 M.L.L.W.
TURNING AREA
NON-FEDERAL

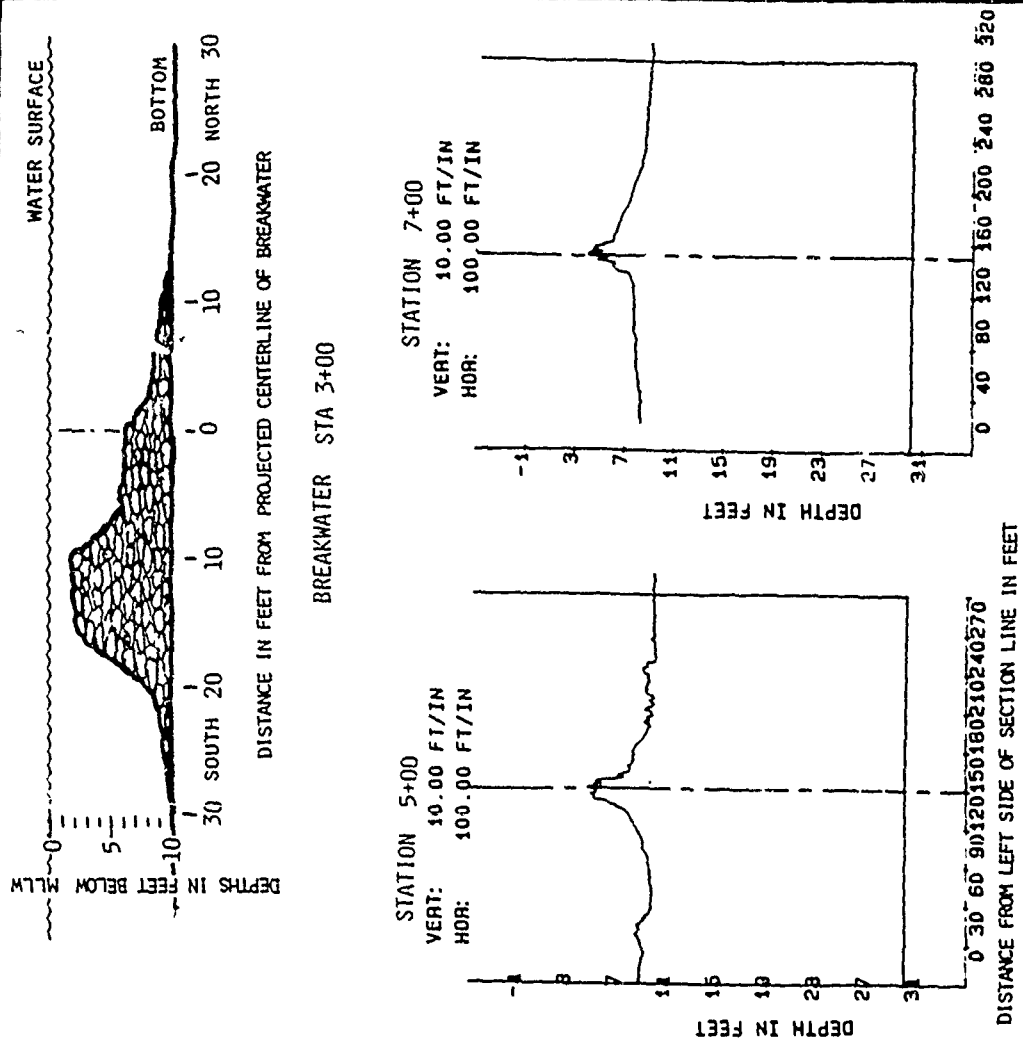


AYOUT

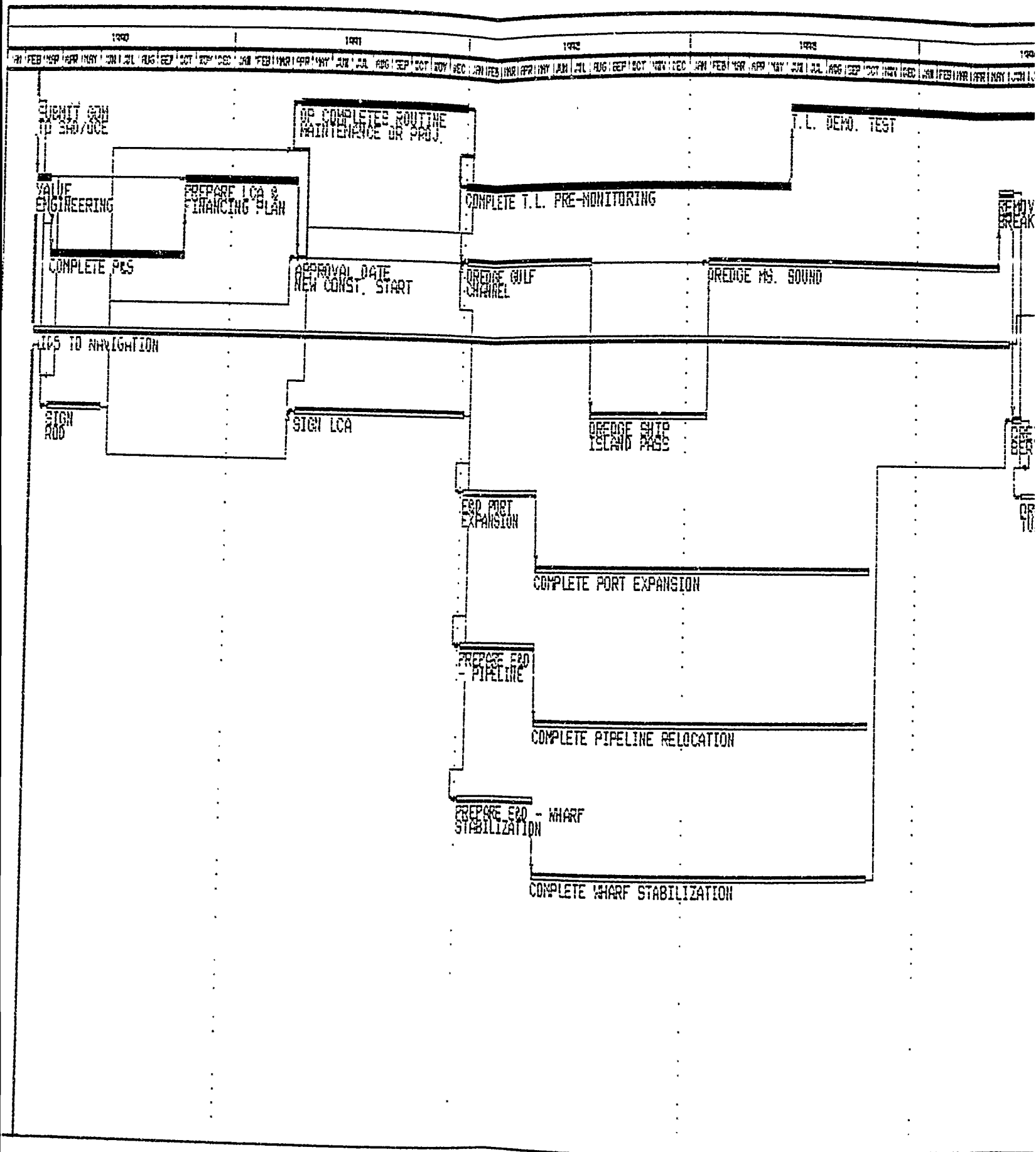
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CHECKED BY C.A.D.	CORPS OF ENGINEERS	
APPROVED BY L.K.R.	RECOMMENDED	
BY B.W.O.	TURNING BASIN DESIGN	
DATE JUL 1952	SCALE 1" = 100'	PLATE 9



GULFPORT TURNING BASIN
BREAKWATER



GULFPORT HARBOR, MISSISSIPPI
PLAN VIEW AND SECTIONS
OF STONE BREAKWATER



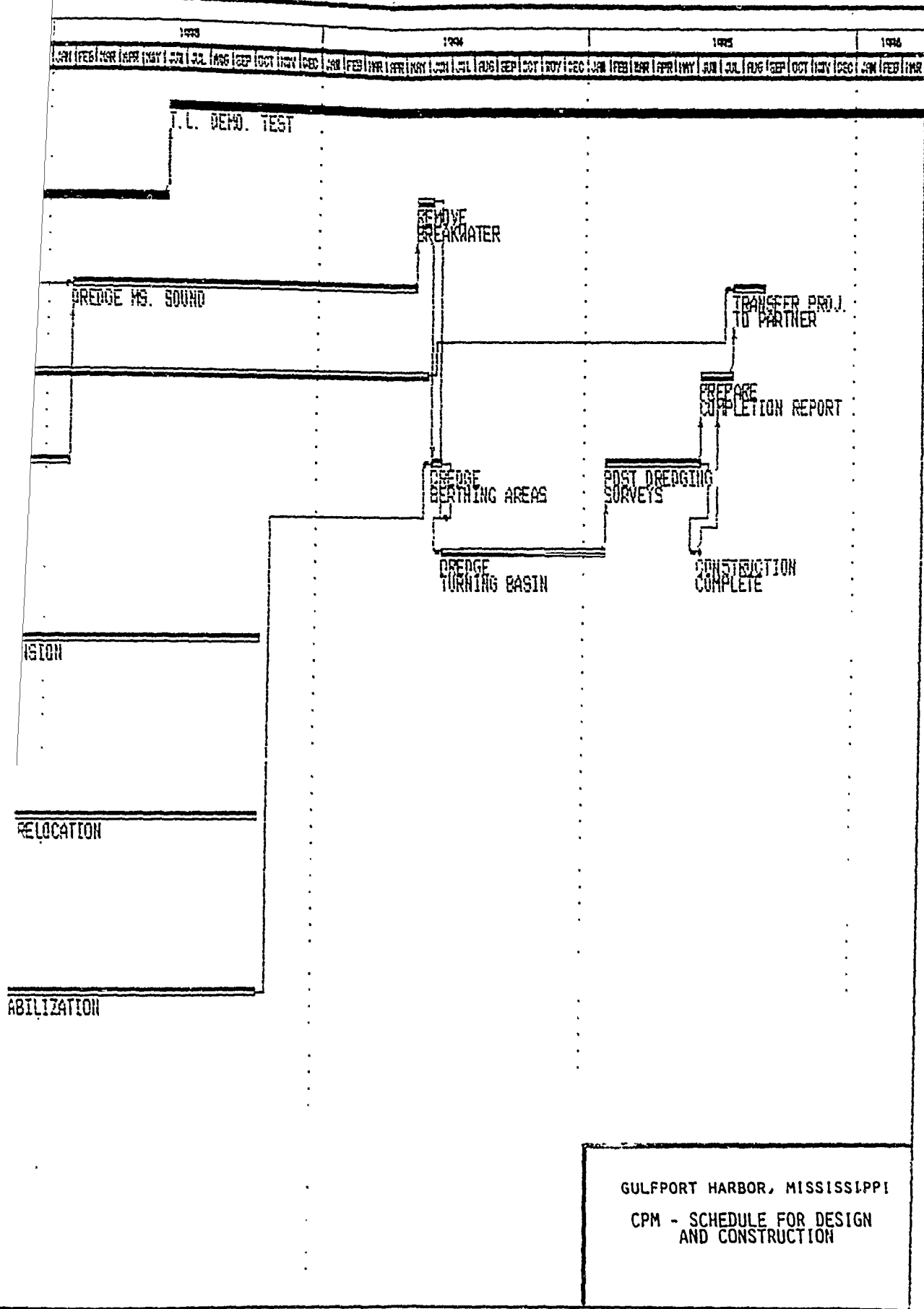


EXHIBIT A

EXHIBIT A

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Mississippi States Port Authority at Gulfport, dated Sept. 19, 1988	A-1-1
Encl: Resolution, Sept. 16, 1988	A-1-2
Mississippi State Port Authority at Gulfport, dated Nov. 23, 1988	A-2-1
Encls:	
1. Excerpts from M B I Act	A-2-3
2. Resolution, Nov. 9, 1988	A-2-6
3. Request for Grant, Nov. 21, 1988	A-2-8

Mid America's **GULFPORT**

MISSISSIPPI STATE PORT AUTHORITY AT GULFPORT

September 19, 1988

Colonel Larry S. Bonine
District Engineer, Mobile District
U.S. Corps of Engineers
P.O. Box 2288
Mobile, AL 36628-0001

RE: Gulfport Channel Project

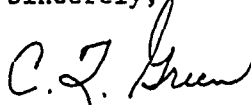
Dear Colonel Bonine:

By copy of the enclosed resolution dated September 16, 1988, I am pleased to inform you the National Economic Development (NED) Plan for navigation improvements to Gulfport Harbor as presented by your staff on June 29, 1988, has the full support of the Mississippi State Port Authority at Gulfport.

We will immediately begin work on the Local Cooperation Agreement for the project and no inordinate delays are anticipated. The continued excellent support provided by your district staff again deserves special mention as their dedication and expertise "made it work".

We look forward to bringing this project in "on time" and "in the money", and stand ready to take any action necessary to make this happen. Please call if we can be of assistance.

Sincerely,



C. T. GREEN

Deputy Port Director

cc: Senator Stennis
Senator Cochran
Congressman Lott
Dalton D. McGuire
Paul M. Franke
Bert P. Allen
Frank E. Bertucci
Charles A. Webb, Jr.
Ben H. Stone
Dan Tucker

R E S O L U T I O N

WHEREAS, The Mobile District Corps of Engineers has completed its study of navigation improvements for Gulfport Harbor, Mississippi, and

WHEREAS, the study findings reveal that the plan which would yield the greatest economic benefits in excess of costs, the National Economic Development (NED) Plan, consists of the following channel improvements:

Deepening the Mississippi Sound channel segment to 36 feet at a width of 220 feet, and deepening the Bar and Gulf channel segments to 38 feet at a width of 300 feet, and

Realignment of Ship Island Pass channel segment approximately 1900 feet west of the present channel alignment, and widening each of the problem bends, and

WHEREAS, The Mississippi State Port Authority at Gulfport, Mississippi, has the financial capability to provide the necessary items of local cooperation.

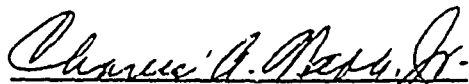
NOW, THEREFORE, be it resolved that the Board of Commissioners of the Mississippi State Port Authority at Gulfport, Mississippi, hereby support the NED plan of improvement for Gulfport Harbor as described above and presented by the Mobile District Corps of Engineers to the Director of the Mississippi State Port Authority on 29 June 1988. This is the 16th day of September, 1988.


Dalton D. McGuire


Paul M. Franke, Jr.


Bert P. Allen


Frank E. Bertucci


Charles A. Webb, Jr.



Mid America's **GULFPORT**

MISSISSIPPI STATE PORT AUTHORITY AT GULFPORT

November 23, 1988

Ms. Amy Bridges
SAMPD-SA
U. S. Army Corps of Engineers
Mobile District
Post Office Box 2288
Mobile, AL 36628-0001

RE: Financing Plan; Gulfport Channel &
Harbor Deepening Project

Dear Ms. Bridges:

In response to your request for our Financing Plan for the referenced project, the following information is furnished:

1. The Mississippi Legislature in its regular session of 1986 passed the Mississippi Business Investment Act (enclosed) which provides for a grant of "not to exceed" Twenty Million Dollars (\$20,000,000.00) to any state-owned port bordering on the Gulf of Mexico. The Port of Gulfport is the only port in the state meeting that requirement.
2. Projects eligible may include but are not restricted to:
 - i. Dredging and deepening the access channel and harbor basin of the port;
 - ii. Effecting the enlargement of the land area of the port by reclamation;
 - iii. Construction and installation of piling, bulkheads, docks, wharves, warehouses and appurtenances; and
 - iv. Acquisition of facilities and equipment for handling bulk and containerized cargo.
3. A Letter of Intent and Project Grant Application were filed with the Mississippi Department of Economic Development on November 21, 1988.

November 23, 1988

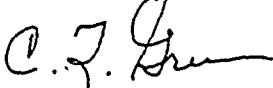
Page 2

Ms. Amy Bridges

Also enclosed is a copy of the required resolution and the cover letter for the grant application. As this Act was passed with the Gulfport Channel and Harbor Deepening Project specifically targeted, we believe the state share of the required funds will be available when required after July 1, 1990.

The Mississippi Business Investment Act is, in effect, our Financing Plan. We trust this meets your requirements and will be pleased to answer any further questions you may have on this matter.

Sincerely,



C. T. Green
Deputy Port Director

CTG/sdg

cc: W. G. McGhee
J. Grandison

Encl.

The original enclosure consisted of the entire Mississippi Business Investment Act (1986). The following are pertinent excerpts from that act:

CHAPTER 61 [NEW]

Mississippi Business Investment Act

Sec.

- 57-61-1. Short title.
- 57-61-3. Declaration of purpose.
- 57-61-5. Definitions.
- 57-61-7. Establishment of Business Investment Program.
- 57-61-9. Letters of intent to locate, expand, or build; applications for loans or grants; maximum amount of loans; projects involving port facilities.
- 57-61-11. Guidelines, rules, and regulations for repayment of funds.
- 57-61-13. Preferences with respect to enterprise zones and certain municipalities.
- 57-61-15. Allocation of bond proceeds; lien requirements; effect of failure to create predicted jobs; effect of failure to meet repayment obligations; assistance for firms currently operating elsewhere in state.
- 57-61-17. Rule-making authority of board; annual reports; recordkeeping.
- 57-61-19. Certification of nondiscrimination.
- 57-61-21. Creation of Mississippi Business Investment Fund and Mississippi Business Investment Sinking Fund.
- 57-61-23. Payment of principal and interest on bonds and notes; cancelation of bonds and notes; annual reporting by State Treasurer; information to be included in executive budget; interest rate on loans.
- 57-61-25. Authorization of indebtedness; issuance of bonds; form of bonds; exemption from taxation by state; issuance of refunding bonds; taxable bonds.
- 57-61-27. Sale of bonds; issuance of temporary bonds; investment of bond proceeds; registration of bonds; payment of costs and expenses.
- 57-61-29. Authorization of temporary borrowing; issuance of replacement notes and refunding bonds; payment of proceeds to State Treasurer.
- 57-61-31. Disposition of proceeds from bond sales and other funds.
- 57-61-33. Grant for completion of Technology Transfer Center at National Space Technology Laboratory.
- 57-61-34. Loans for business incubation centers.
- 57-61-35. Representation of seller by Attorney General; payment of administrative, legal, and other expenses.
- 57-61-37. Authorization for municipalities to borrow from Board of Economic Development; terms.

§ 57-61-1. Short title.

This chapter shall be known and may be cited as the Mississippi Business Investment Act.

SOURCES: Laws, 1986, ch. 419, § 1, eff from and after passage (approved March 31, 1986).

§ 57-61-3. Declaration of purpose.

It is the purpose of this chapter to promote business and economic development in the State of Mississippi through job producing programs and by providing loans to municipalities as defined in this chapter; to assist in securing strategic investments and/or investments in small communities by private companies locating or expanding in the state; to promote the improvement and enhancement of facilities utilized in foreign and domestic commerce to and from Mississippi through state-owned ports and to provide loans to state agencies as defined in this chapter, for the construction and development of harbor, channel and port facilities; and to authorize the issuance of state bonds or notes for funding of said programs.

SOURCES: Laws, 1986, ch. 419, § 2, eff from and after passage (approved March 31, 1986).

§ 57-61-7. Establishment of Business Investment Program.

There is hereby established, under the direction of the department, a program to be known as the Business Investment Program for the purpose of making grants or loans to municipalities in order to install and effect specific improvements and projects necessary to complement industrial investment by private companies, the federal government or municipalities which increase Mississippi's share of domestic, international and foreign commerce or create new full-time jobs.

SOURCES: Laws, 1966, ch. 419, § 4, eff from and after passage (approved March 31, 1966).

§ 57-61-9. Letters of intent to locate, expand, or build; applications for loans or grants; maximum amount of loans; projects involving port facilities.

- (5)(a) Notwithstanding anything contained in this chapter, an agency of the State of Mississippi operating a state-owned port, and hereinabove identified as a "municipality" and "governmental unit" for purposes of this chapter, may make application for a loan or grant under the terms and provisions of this chapter. The application shall be initiated by submission of a letter of intent to engage in a project or projects for the purpose of effecting enlargement and improvement in all facilities used and useful in attracting international and foreign commerce through the port. Projects eligible for inclusion in the letter of intent may include but not be restricted to:
- (i) Dredging and deepening the access channel and harbor basin of the port;
 - (ii) Effecting the enlargement of the land area of the port by reclamation;
 - (iii) Construction and installation of piling, bulkheads, docks, wharves, warehouses and appurtenances; and
 - (iv) Acquisition of facilities and equipment for handling bulk and containerized cargo.
- (b) With respect to a state-owned port bordering on the Gulf of Mexico, the letter of intent shall include the following information and any other information required by the board:
- (i) Present and future annual tonnages expected as a result of the improvements.
 - (ii) Reasons why present facilities are inadequate to enable the port to compete, including limitations imposed by insufficient depth of channel and basin.
 - (iii) Increased channel and basin depths necessary to accommodate modern shipping.
 - (iv) Comparison of the percentage of the world's cargo shipping that can now be accommodated with what could be accommodated with project improvements.
 - (v) Economic contribution to the region and state resulting from increased shipping activity.
 - (vi) Statement of degree to which port revenues are expected to be increased as a result of projects.
 - (vii) Financial data of port activities, including cost of project, degree of federal funding available and required local participation.

On or before January 1, 1989, a state-owned port described in this paragraph (b) shall submit to the Senate Finance Committee and the House Ways and Means Committee of the Mississippi Legislature a comprehensive, written report updating for each committee the information listed in items (i) through (vii) of this paragraph (b) with particular emphasis on the economic contribution to the region and state by shipping activity at the port; on financial data with respect to the degree of federal funding available and local participation in funding port activities; and on progress made in dredging and completing other improvements necessary to accommodate modern shipping.

§ 57-61-11. Guidelines, rules, and regulations for repayment of funds.

The board shall establish such guidelines, rules and regulations for the repayment of funds loaned pursuant to this chapter as may be necessary. These provisions shall include but not be limited to the following:

- (a) Funds may be loaned for a maximum of ten (10) years or the estimated useful life of the property as established by the United States Department of Treasury, whichever is greater.
- (b) The rate of interest charged by the department for improvements not on publicly owned property may be negotiated by the board.
- (c) For all improvements funded through this chapter which occur on publicly owned property, repayment of funds loaned may, in the discretion of the board, involve only the principal amount loaned with no interest charged thereon.
- (d) Notwithstanding the foregoing, in the case of an application under Section 57-61-9(5)(a), the guidelines shall include but not be limited to the following:
 - (i) Funds may be loaned for a maximum of twenty (20) years, or the estimated useful life of improvements on the land areas of the port, whichever is greater.
 - (ii) The rate of interest charged by the department for loans for port projects shall be no less than the interest rate on the bonds sold pursuant to this chapter.
 - (iii) The total of grants and loans to any one state-owned port made pursuant to an application under Section 57-61-9(5)(a) shall not exceed Twenty Million Dollars (\$20,000,000.00); however, no grant to any state-owned port bordering on the Gulf of Mexico shall be made prior to July 1, 1990.
 - (iv) Before any loan or grant may be made under Section 57-61-9(5)(a) to a state-owned port bordering the Gulf of Mexico, the applicant shall make adequate assurance to the board that federal participation in the cost of the project or projects has been committed contingent only upon availability of local participation in accordance with federal guidelines.

SOURCES: Laws, 1986, ch. 419, § 6; 1987, ch. 524, eff from and after passage (approved April 21, 1987).

R E S O L U T I O N

WHEREAS, the Mississippi State Legislature in 1986 established the Mississippi Business Investment Act, to be administered by the Mississippi Department of Economic Development, to provide for the improvement and enhancement of facilities utilized in foreign and domestic commerce to and from Mississippi through State-owned ports and to provide loans or grants to State agencies as defined in this act, for the construction and development of harbor, channel and port facilities; and to authorize the issuance of State bonds or notes for funding of said programs; and

WHEREAS, the Mississippi Business Investment Act specifically requests a Resolution from the Board of Commissioners of the Mississippi State Port Authority at Gulfport officially requesting the Mississippi Business Investment Program funds in the amount of \$20,000,000.00; and

WHEREAS, the Mississippi Business Investment Act requests that the Board of Commissioners of the Mississippi State Port Authority at Gulfport authorize the Responsible Officer on behalf of the State Port to sign all necessary documents required by the Mississippi Department of Economic Development in this endeavor; and

WHEREAS, the Board of Commissioners of the Mississippi State Port Authority at Gulfport designates Mr. C. T. Green, Deputy Port Director as the Responsible Officer on behalf of the State Port to request Mississippi Business Investment funding; and

WHEREAS, Mr. C. T. Green has knowledge of the statutes, including information pertinent to the transaction contemplated by the request for Mississippi Business Investment Program funding; and

WHEREAS, this Resolution shall be published once a week for at least three (3) consecutive weeks in The Sun Herald, a newspaper published and having a general circulation in the County.

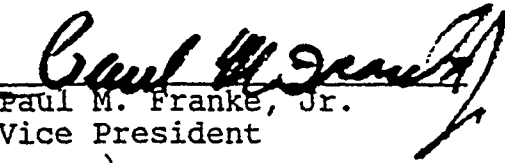
THEREFORE, BE IT RESOLVED that the Mississippi State Port Authority at Gulfport Board of Commissioners authorizes Mr. C. T. Green to act as its Responsible Officer in the matter of the Port of Gulfport's request for Mississippi Business Investment Program funds;

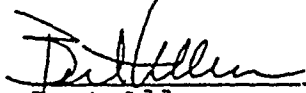
ENCL 2

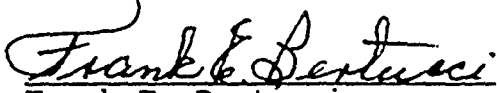
BE IT FURTHER RESOLVED that this Resolution be spread upon the official minutes of the Mississippi State Port Authority at Gulfport and a copy be forwarded to the Mississippi Department of Economic Development.

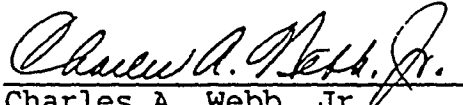
This the 9th day of November, 1988.


Dalton D. McGuire
President


Paul M. Franke, Jr.
Vice President


Bert Allen
Secretary


Frank E. Bertucci
Commissioner


Charles A. Webb, Jr.
Commissioner



Mid America's **GULFPORT**

MISSISSIPPI STATE PORT AUTHORITY AT GULFPORT

November 21, 1988

Mr. J. Mac Holladay
Executive Director
MISSISSIPPI DEPARTMENT OF
ECONOMIC DEVELOPMENT
Post Office Box #849
Jackson, MS 39205

RE: Request for Grant: Mississippi Business
Investment Act

Dear Mr. Holladay:

The Mississippi State Port Authority at Gulfport wishes to initiate, by submission of this Letter of Intent, a request for a grant in the amount of \$20,000,000.00, for the purpose of effecting enlargements and improvements in facilities used and useful in attracting international and foreign commerce through the Port of Gulfport.

The projects eligible for inclusion under the Mississippi Business Investment Act include, but are not restricted to, the following:

- 1) Dredging and deepening the access channel and harbor basin of the Port of Gulfport;
- 2) Effecting the enlargement of the land area of the Port of Gulfport by reclamation;
- 3) Construction and installation of pilings, bulkheads, docks, and wharves;
- 4) Acquisition of facilities and equipment for handling bulk and containerized cargo.

A completed Project Summary Application relative to the Mississippi Business Investment Program is attached hereto, specifically outlining the requested details of the project.

In addition to the above, the following data is presented to the Project Grant and Application which is submitted herewith and made a part hereof, as required in Section 57-61-9, 5(b) of the Mississippi Code:

ENCL 3

Mr. J. Mac Holladay
November 21, 1988
Page 2.

- 1) Present and future annual tonnages expected as a result of the improvements;
- 2) Reasons why present facilities are inadequate to enable the Port to compete, including limitations imposed by insufficient depth of channel and basin;
- 3) Increased channel and basin depths necessary to accommodate modern shipping;
- 4) Comparison of the percentage of the world's cargo shipping that can now be accommodated with what could be accommodated with project improvements;
- 5) Economic contribution to the region and state resulting from increased shipping activity;
- 6) Statement of degree to which Port revenues are expected to be increased as a result of projects;
- 7) Financial data of Port activities, including cost of project, degree of federal funding available and required local participation.

This Letter of Intent, Project Summary Application and Data required by Section 57-61-9, 5(b) of the Mississippi Code are being submitted for formal review and approval by the Mississippi Department of Economic Development in accordance with the provisions set forth by the Mississippi Business Investment Act of 1986.

Your early and favorable consideration is respectfully requested. Should any questions arise concerning this Request, please do not hesitate to contact our office.

Very truly yours,

MISSISSIPPI STATE PORT AUTHORITY
AT GULFPORT


C. T. Green
Deputy Port Director

CTG/st

Attachments

EXHIBIT B

Exhibit B

Table of Contents

Correspondence

Page

Commander, Eighth Coast Guard District,
dated May 11, 1989

B-1-1

Encl: Aids to Navigation Cost Estimate

B-1-2

05/13/89

10:36

8TH COAST GUARD DIST

0.205

203

U.S. Department
of Transportation

United States
Coast Guard



COMMANDER
EIGHTH COAST GUARD DISTRICT
HALE BOOGS FEDERAL BLDG.

500 CAMP ST.
NEW ORLEANS, LA 70112-3596
STAFF SYMBOL: (Oan)
PHONE: (504) 589-5234

7100
MAY 11 1989

From: Commander, Eighth Coast Guard District
To: U. S. Army Corps of Engineers, New Orleans District

Subj: AIDS TO NAVIGATION FOR GULFPORT COLE PROJECT

Ref: (a) Your letter to CWO2 R. M. Claytor (oan) of 16 August 1988

1. As you requested in reference (a) I have estimated the initial cost to mark the improved harbor at Gulfport, MS. The initial cost at 1989 prices will be approximately \$132,000. Enclosure (1) gives a breakdown of the cost.

2. Annual maintenance costs for the aids to navigation of the improved channel will not increase as fewer aids to navigation will be required.

3. If you have any questions, please contact LTJG Kurt Van Horn of my Projects Section at (504) 589-6235.

Gary A. Bird
GARY A. BIRD
By direction

Encl: (1) Cost Estimate

05/13/89

10:35

3TH COGARD DIST

NO. 226

302

Cost Estimate for Aid to Navigation for COE Project in Gulfport MS.

Establish:

(3)	8X26 Lighted Buoys.....	\$50058.00
(1)	Range Front Light.....	\$ 7610.00
(1)	Range Rear Light.....	\$12350.00
		<u>\$70018.00</u>

Relocate:

(7)	8X26 Lighted Buoys.....	\$10402.00
(6)	6X20 Lighted Buoys.....	\$ 7920.00
(1)	Range Front Light.....	\$10558.00
		<u>\$28880.00</u>

Discontinue:

(7)	6X20 Lighted Buoys.....	\$10402.00
(1)	2CR Unlighted Buoy.....	\$ 1320.00
(1)	2NR Unlighted Buoy.....	\$ 1320.00
(1)	Leading Light.....	\$ 2944.00
		<u>\$15986.00</u>

Cost Totals.....	\$114884.00
Contingency (15%).....	\$ 17233.00
Grand Total.....	<u>\$132117.00</u>

ENCL 1

EXHIBIT C

EXHIBIT C
COST APPENDIX

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Estimate of Project First Costs	C-1-1
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Annual Economic Costs and Benefits - NED Plan August 1991 Construction Start	C-1-4

SECTION 2

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Code of Cost Accounts Detailed Project Cost Summary	C-2-2
Code of Cost Accounts Itemized Cost Estimate of Individual Account Codes	C-2-8

EXHIBIT C

SECTION 1

TABLE C-1
ESTIMATE OF PROJECT FIRST COSTS (\$'000)

DESCRIPTION (COSTS ROUNDED)	Quantity (C.Y.)	Unit Cost	T. L. DISPOSAL PLAN (8 7/8%)	Unit Cost	GULF DISPOSAL PLAN (8 7/8%)	Quantity (C.Y.)	Unit Cost	NED PLAN (8 7/8%) MRDA 1988
CHANNELS:								
T.L. Test			0		0	1,000,000	0.58	580
Ms. Sound	8,854,214 1/2	0.58	5,214	2.31	20,965	7,854,214 1/2	2.31	18,655 1/2
Ship I. Pass	2,589,700	0.58	1,502 4/	1.27	3,283	2,589,700	1.27	3,289 4/
Gulf Channel	3,052,600	0.99	3,187 4/	0.99	3,187	3,052,600	0.99	3,187 4/
Breakwater Removal	44,000	LS	43	LS	43	44,000	LS	43
T.L. Monitoring			0		0		LS	1,643 5/
Sub-total			9,946		27,484			27,397
Planning Engineering & Design		Job	2,406	Job	2,406		Job	2,406
Construction Management		Job	1,245	Job	1,245		Job	1,245
Contingencies			1,823		4,440			4,440
Navigation Aids (USCG)			115		115			115
Sub-total			5,589		8,206			8,206
TOTAL FED. FIRST COST			15,535		35,690			35,603
NON FEDERAL LEPRD:								
Labor - LCA/Realestate		0.58	18		18			18
Dredging Berthing Areas	154,699		90	2.31	357	154,699	0.58	90
Temporary Easement			1	Job	1		Job	1
Wharf Stabilizing		Job	2,100	Job	2,100		Job	2,100
Pipeline Relocation		Job	2,314	Job	2,314		Job	2,314
Engineering and Design			39		39			39
Construction Management			82		82			82
Contingency			226		226			226
NON-FEDERAL LEPRD			4,870		5,137			4,870
TOTAL PROJECT FIRST COST			20,405		40,827			40,473 5/

- 1/ Includes dredged material from the anchorage basin.
2/ Construction quantities based on anchorage area conditions which will exist following completion of the Port Authority's expansion operation (-1,457,000 c.y.).
3/ Includes \$512,000 for mobilization and demobilization.
4/ Includes \$165,000 for mobilization and demobilization.
5/ Excludes \$1,110,000 required to be budgeted under O&M allocations.

TABLE 1
ESTIMATE OF PROJECT ANNUAL COSTS (\$1000)

DESCRIPTION (COSTS ROUNDED)	(C.Y.)	Unit Cost	T.L. DISP. 8 7/82	Unit Cost	GULF DISPOSAL PLAN	(C.Y.)	Unit Cost	NEO PLAN 8 7/82
Total Federal First Cost-GNF Int. During Construction			15,535 42,565		35,690 44,060			33,713 2/ \$4,054
NET FEDERAL INVESTMENT			18,100		39,750			37,767
FEDERAL:								
Interest and Amortization			1,630		3,573			3,400
Maintenance Dredging:								
Mississippi Sound	193,673 1/	0.50	97	2.73	529	193,673 1/	0.50	97
Ship Island Pass	190,220	1.27	95	1.27	242	190,220	1.27	242
Gulf Channel	278,064	1.09	303	1.09	303	278,064	1.09	303
Maintenance Nav Aids			0		0			0
TOTAL MAINTENANCE DREDGING			495		1,074			642
TOTAL FED. ANNUAL CHARGES			2,125		4,653			4,042
NON-FEDERAL:								
Total Local First Cost			4,870		5,137			4,870
Interest During Const.			324		367			324
NET LOCAL INVESTMENT			5,194		5,504			5,194
NON-FEDERAL:								
Interest & Amortization			468		496			468
Maintenance Dredging	30,000	0.5	15	2.73	82	30,000	0.5	15
TOTAL NON-FEDERAL CHARGES			483		578			483
TOTAL ANNUAL CHARGES			2,607		5,230			4,525
BENEFITS:								
Transportation Savings			4,937		4,937			4,937
BENEFIT/COST RATIO			1.89		0.94			1.09
NET BENEFITS			2,330		(293)			412
B/C WITH ADDED BENEFITS FOR GULF DISPOSAL					1.45			1.51

1/ Includes dredged material from the anchorage basin.

2/ Excludes costs for demonstration program monitoring per WFOA 1988.

TABLE C-3

FIRST COSTS - NED PLAN
OCTOBER 1989 PRICE LEVEL, 8 7/8 % INTEREST
AUGUST 1991 CONSTRUCTION START

ITEMS	NED PLAN
FIRST COST	
GENERAL NAV FEATURES	
DREDGING:	
T.L. Dredging	\$667,000
Ship Island Pass & Bar	\$7,447,400
Mississippi Sound	\$21,502,450
Monitoring Demo Test	\$3,000,000
Subtotal	\$32,616,850
Planning, Engineering & Design	\$2,473,477
Construction Management	\$1,490,391
Navigation Aids (USCG)	\$132,000
Subtotal	\$4,095,868
TOTAL COST GENERAL NAV FEATURES	\$36,712,718
NON-FEDERAL LERRD:	
Realestate	\$550
Utilities	\$4,619,750
Dredging Berthing Areas	\$108,000
Lands and Damages	\$21,120
Engineering & Design	\$39,000
Construction Management	\$82,000
NON-FEDERAL LERRD	\$4,870,420
TOTAL PROJECT FIRST COST	\$41,583,138 ^{1/}

^{1/}Includes \$1,110,000 O&M Funds for Monitoring O&M Material.

Construction Period, 1 Aug 91 - 1 Mar 94.

TABLE C-4

ANNUAL ECONOMIC COSTS AND BENEFITS
OCTOBER 1989 PRICE LEVEL, 8 7/8 % INTEREST
NED PLAN - AUGUST 1991 CONSTRUCTION START

=====	
FEDERAL FINANCIAL COST	\$36,712,718
NON-ECONOMIC FIRST COST (WRDA 88))	-3,000,000 ^{1/}

FEDERAL ECONOMIC FIRST COST	\$33,712,718
FEDERAL INTEREST DURING CONSTRUCTION	\$2,712,321

TOTAL FEDERAL ECONOMIC PROJECT COST	\$36,425,039
NON-FEDERAL FINANCIAL COST	\$4,870,420
NON-ECONOMIC FIRST COST	0

NON-FEDERAL ECONOMIC FIRST COST	\$4,870,420
NON-FEDERAL INTEREST DURING CONSTRUCTION	334,000

TOTAL NON-FEDERAL ECONOMIC PROJECT COST	\$5,204,420
FEDERAL ANNUAL CHARGES:	
FEDERAL NET INVESTMENT	\$36,425,039
INTEREST AND AMORTIZATION	\$3,279,000
ANNUAL O&M	642,000

TOTAL FEDERAL ANNUAL CHARGES	\$3,921,000
NON-FEDERAL ANNUAL CHARGES:	
NET NON-FEDERAL INVESTMENT	\$5,204,420
INTEREST AND AMORTIZATION	\$469,000
ANNUAL O&M	15,000

TOTAL NON-FEDERAL ANNUAL CHARGES	\$484,000
TOTAL ANNUAL CHARGES	\$4,405,000
TOTAL AVERAGE ANNUAL BENEFITS	\$4,936,900
BENEFIT-TO-COST RATIO	1.12
NET BENEFITS	\$531,900
ADDITIONAL BENEFITS FOR GULF DISPOSAL	1.61

^{1/}Monitoring Costs are excluded From B/C Analysis Per WRDA 1988.

Construction Period, 1 Aug 91 - 1 Mar 94.

=====

EXHIBIT C

SECTION 2

**GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL**

3 Nov 1989

FEDERAL	Estimated Cost	Contingency	Total Cost
02. RELOCATIONS	\$1,836	\$184	\$2,020
09. CHANNELS AND CANALS			
09.0.1.B. SITE WORK, NAVIGATION AIDS IN WATER	\$114,800	\$17,200	\$132,000
12. DREDGING			
12.0.2. PIPELINE DREDGE	\$580,000	\$87,000	\$667,000
12.0.3. HOPPER DREDGE	6,476,000	971,400	7,447,400
12.0.4. MECHANICAL DREDGING	18,698,000	2,804,450	21,502,450
12.0.6. MONITORING DEMO TEST	1,643,000	247,000	1,890,000
	\$27,397,000	\$4,109,850	\$31,506,850
TOTAL CONSTRUCTION COST	\$27,513,636	\$4,127,234	\$31,640,870
01. LANDS AND DAMAGES	\$8,175	\$817	\$8,992
30. PLANNING, ENGINEERING AND DESIGN	2,396,060	66,405	2,462,465
31. CONSTRUCTION MANAGEMENT	1,245,061	245,330	1,490,391
TOTAL FEDERAL COST	\$31,162,932	\$4,439,786	\$35,602,718
 NON-FEDERAL			
02. RELOCATIONS			
02. REAL ESTATE	\$500	\$50	\$550
02.3. UTILITIES	4,413,250	206,500	4,619,750
Subtotal	\$4,413,750	\$206,550	\$4,620,300
12. DREDGING			
12.0.2. DREDGING BERTHING AREAS	\$90,000	\$18,000	\$108,000
TOTAL CONSTRUCTION COSTS	\$4,503,750	\$224,550	\$4,728,300
01. LANDS AND DAMAGES	\$19,200	\$1,920	\$21,120
30. PLANNING, ENGINEERING AND DESIGN	39,000	0	39,000
31. CONSTRUCTION MANAGEMENT	82,000	0	82,000
TOTAL NON-FEDERAL COSTS	\$4,643,950	\$226,470	\$4,870,420
TOTAL PROJECT COST SUMMARY	\$35,806,882	\$4,666,256	\$40,473,138

NOTE: The projected costs for real estate actions, as shown in the Code of Accounts, are based on projections of administrative costs for the provision of land necessary for the project. It is anticipated that no additional land will be required over that already owned by the non-Federal sponsor.

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL

Page 1 of 6

3 Nov 1989

	Estimated Cost	Contingency	Total Cost
02. RELOCATIONS			
02.C.C.D. ATTORNEY'S OPINION	\$1,836	\$184	\$2,020
Subtotal	\$1,836	\$184	\$2,020
09. CHANNELS AND CANALS			
09.0.1.B. SITE WORK, NAVIGATION AIDS IN WATER	\$114,800	\$17,200	\$132,000
Subtotal	\$114,800	\$17,200	\$132,000
12. DREDGING			
12.0.2. PIPELINE DREDGE	\$580,000	\$87,000	\$667,000
12.0.3. HOPPER DREDGE	6,476,000	971,400	7,447,400
12.0.4. MECHANICAL DREDGING	18,698,000	2,804,450	21,502,450
12.0.6. MONITORING DEMO TEST	1,643,000	247,000	1,890,000
Subtotal	\$27,397,000	\$4,109,850	\$31,506,850
TOTAL CONSTRUCTION COST	\$27,513,636	\$4,127,234	\$31,640,870
01. LANDS AND DAMAGES			
01.C. LOCAL COOPERATION AGREEMENT			
01.C.1. DRAFT LCA	\$918	\$92	\$1,010
01.C.2. FINAL LCA	918	92	1,010
01.C.3. NEGOTIATE LCA	719	72	791
Subtotal	\$2,555	\$256	\$2,811
01.D. ACQUISITIONS			
01.D.1. ATTORNEY'S OPINION	\$754	\$75	\$829
01.D.2. MAPPING, SURVEY & TRACT OWNERSHIP	1,278	128	1,406
01.D.4. NEGOTIATIONS & CLOSING	394	39	433
Subtotal	\$2,426	\$242	\$2,668
01.F. APPRAISALS			
01.F.1. APPRAISALS	\$2,800	\$280	\$3,080
Subtotal	\$2,800	\$280	\$3,080
01.K. TEMPORARY PERMITS	\$394	\$39	\$433
Subtotal	\$394	\$39	\$433
Subtotal 01. Account	\$8,175	\$817	\$8,992

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL

Page 2 of 6

3 Nov 1989

	Estimated Cost	Contingency	Total Cost
30. PLANNING, ENGINEERING AND DESIGN			
30.A. PLANNING	\$5,055	\$1,011	\$6,066
Subtotal	\$5,055	\$1,011	\$6,066
30.B. ENGINEERING PRIOR TO 1 OCTOBER 1989	\$1,970,800	-	\$1,970,800
Subtotal	\$1,970,800	-	\$1,970,800
30.C. LOCAL COOPERATIVE AGREEMENTS			
30.C.A. DRAFT LCA	\$6,915	\$1,485	\$8,400
30.C.B. FINAL LCA AND FINANCIAL PLAN	10,298	1,598	11,896
30.C.1. LCA NEGOTIATIONS	1,307	293	1,600
Subtotal	\$18,520	\$3,376	\$21,896
30.D. ENVIRONMENTAL AND REGULATORY ACTIVITIES			
30.D.2. 401,404, AND ROD	\$8,897	\$1,335	\$10,232
30.D.4. FISH AND WILDLIFE COORDINATION ACT	10,000	0	10,000
30.D.5. COASTAL ZONE CONSISTENCY	2,021	303	2,324
30.D.6.4. DRAFT FOM	830	125	955
30.D.6.7. PRELIMINARY DESIGN P&S	830	125	955
30.D.D. ENVIRONMENTAL COORDINATION	16,919	2,537	19,456
Subtotal	\$39,497	\$4,425	\$43,922
30.E. DESIGN RELATED ENGINEERING			
30.E.1. DESIGN RELATED ENGINEERING (SUBSURFACE EXPLORATIONS)	\$3,948	\$0	\$3,948
30.E.2. SAMPLING, TESTING AND ANALYSIS	5,406	811	6,217
30.E.4.7. PREDESIGN INVESTIGATIONS	25,369	3,805	29,174
Subtotal	\$34,723	\$4,616	\$39,339
30.F. GENERAL DESIGN MEMORANDUM (GDM)			
30.F.B. GDM Final	\$36,478	\$6,387	\$42,865
30.F.C. GDM SUPPLEMENT	3,933	787	4,720
30.F.P. VALUE ENGINEERING STUDIES	40,446	4,248	44,694
Subtotal	\$80,857	\$11,422	\$92,279
30.H. PLANS AND SPECIFICATIONS			
30.H.B. FINAL DESIGN	\$66,117	\$9,210	\$75,327
30.H.E. BIDABILITY, CONSTRUCTABILITY, AND OPERABILITY REVIEW	17,046	2,012	19,058
Subtotal	\$83,163	\$11,222	\$94,385

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL

Page 3 of 6

3 Nov 1989

	Estimated Cost	Contingency	Total Cost
30.J. ENGINEERING DURING CONSTRUCTION			
30.J.2. PERIODIC INSPECTIONS	\$8,318	\$957	\$9,274
Subtotal	\$8,318	\$957	\$9,274
30.M. COST ENGINEERING	\$29,261	\$4,853	\$34,114
Subtotal	\$29,261	\$4,853	\$34,114
30.N. CONSTRUCTION AND SUPPLY CONTRACT AWARD ACTIVITIES			
30.N.1. PREPARATION OF BID DOCUMENTS	\$1,692	\$169	\$1,861
30.N.3. CONTRACTING OFFICE ACTIVITIES	2,941	294	3,235
Subtotal	\$4,633	\$463	\$5,096
30.P. PROJECT MANAGEMENT	\$48,430	\$9,499	\$57,929
Subtotal	\$48,430	\$9,499	\$57,929
30.Z. MISCELLANEOUS ACTIVITIES			
30.Z.1.0. MISCELLANEOUS ACTIVITIES	\$72,803	\$14,561	\$87,364
Subtotal	\$72,803	\$14,561	\$87,364
Subtotal 30. Account	2,396,060	66,405	2,462,465
31. CONSTRUCTION MANAGEMENT			
31.B. CONTRACT ADMINISTRATION			
31.B.1. PRE-AWARD ACTIVITIES	\$5,137	\$1,008	\$6,145
31.B.2. AWARD ACTIVITIES	419	84	503
31.B.3. REVIEW AND APPROVAL OF CONTRACT PAYMENTS	4,403	881	5,284
31.B.4. CONTRACT MODIFICATIONS	16,160	3,232	19,392
31.B.5. PROGRESS AND COMPLETION REPORTS	71,791	14,358	86,149
31.B.9. ALL OTHER ACTIVITIES	23,803	4,724	28,527
Subtotal	\$121,713	\$24,287	\$146,000
31.E. INSPECTION AND QUALITY ASSURANCE			
31.E.1. SCHEDULE COMPLIANCE	\$585,899	\$117,180	\$703,079
31.E.2. COMPLIANCE SAMPLING AND TESTING	52,211	7,800	60,011
31.E.3. QUANTITY SURVEYS	386,895	77,379	464,274
31.E.9. ALL OTHER ACTIVITIES	7,873	787	8,660
Subtotal	\$1,032,878	\$203,146	\$1,236,024

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER-1, 1989 PRICE LEVEL

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3 Nov 1989

	Estimated Cost	Contingency	Total Cost
31.F. PROJECT OFFICE OPERATION	\$19,172	\$3,834	\$23,006
Subtotal	\$19,172	\$3,834	\$23,006
31.P. PROJECT MANAGEMENT	\$71,298	\$14,063	\$85,361
Subtotal	\$71,298	\$14,063	\$85,361
Subtotal 31. Account	\$1,245,061	\$245,330	\$1,490,391
 TOTAL FEDERAL PROJECT COSTS	 \$31,162,932	 \$4,439,786	 \$35,602,718

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL

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3 Nov 1989

NON-FEDERAL	Estimated Cost	Contingency	Total Cost
02. RELOCATIONS			
02.3. CEMETERIES, UTILITIES AND STRUCTURES CONSTRUCTION ACTIVITIES	\$4,413,250	\$206,500	\$4,619,750
Subtotal	\$4,413,250	\$206,500	\$4,619,750
02.C.D. CEMETERIES, UTILITIES AND STRUCTURES REAL ESTATE ACTIVITIES	\$500	\$50	\$550
Subtotal	\$500	\$50	\$550
12. DREDGING			
12.0.2. DREDGING BERTHING AREAS	\$90,000	\$18,000	\$108,000
Subtotal	\$90,000	\$18,000	\$108,000
TOTAL CONSTRUCTION COST	\$4,503,750	\$224,550	\$4,728,300
01. LANDS AND DAMAGES			
01.C. LOCAL COOPERATION AGREEMENT			
01.C.2. FINAL LCA	\$1,200	\$120	\$1,320
01.C.3. NEGOTIATE LCA	4,000	400	4,400
Subtotal	\$5,200	\$520	\$5,720
01.D. ACQUISITIONS			
01.D.2. MAPPING, SURVEY & TRACT OWNERSHIP	\$4,000	\$400	\$4,400
01.D.3. TITLE EVIDENCE	3,000	300	3,300
01.D.4. NEGOTIATIONS AND CLOSING	4,000	400	4,400
Subtotal	\$11,000	\$1,100	\$12,100
01.F. APPRAISALS			
01.F.2. CONTRACT APPRAISALS	\$1,000	\$100	\$1,100
Subtotal	\$1,000	\$100	\$1,100
01.K. TEMPORARY PERMITS	\$2,000	\$200	\$2,200
Subtotal	\$2,000	\$200	\$2,200
Subtotal 01. Account	19,200	1,920	21,120

GULFPORT HARBOR, MISSISSIPPI
PROJECT COST SUMMARY
OCTOBER 1, 1989 PRICE LEVEL

Page 6 of 6

3 Nov 1989

NON-FEDERAL	Estimated Cost	Contingency	Total Cost
30. PLANNING, ENGINEERING AND DESIGN			
30.H.B. FINAL DESIGN	\$39,000	\$0	\$39,000
Subtotal 30. Account	\$39,000	\$0	\$39,000
31. CONSTRUCTION MANAGEMENT			
31.E. INSPECTION AND QUALITY ASSURANCE	\$82,000	\$0	\$82,000
Subtotal 31. Account	\$82,000	\$0	\$82,000
	=====	=====	=====
	\$121,000	\$0	\$121,000
	=====	=====	=====
TOTAL NON-FEDERAL PROJECT COSTS	\$4,643,950	\$226,470	\$4,870,420
FEDERAL PROJECT COSTS SUMMARY	\$31,162,932	\$4,439,786	\$35,602,718
NON-FEDERAL PROJECT COSTS SUMMARY	4,643,950	226,470	4,870,420
	=====	=====	=====
TOTAL PROJECT COST SUMMARY	\$35,806,882	\$4,666,256	\$40,473,138

COST ESTIMATE SUMMARY FOR REAL ESTATE REPORT

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 02.C.C.D. **ATTORNEY'S OPINION**

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule				IN HOUSE				OUTSIDE POA			Total Contingency	Total
				Overhead	Other	Direct Proj	Contract	(-- Government	Other	Estimate	for	Cost for
				Tech/Indirect General Admin	Charge	Facility Ch	Payments	Agencies	Other	for Account	Account	Account
Organization				Estimate	Estimate	Estimate	(A/B,RR,Con)	Corps	Agencies	02.C.C.D.	02.C.C.D.	02.C.C.D.
REAL ESTATE DIV												
Acquisition Br	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,836	\$184	\$2,020
	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,836	\$184	\$2,020
Totals	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,836	\$184	\$2,020

Cost Estimate with Standard Account Code

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 09.0.1.B.2.	TOTAL PROJECT COST
09.0.1.B.	Navigation Aids in Water				\$114,800	\$17,200	\$132,00
	Subtotal, Construction Costs:				\$114,800		
09.0.1.B.2.	Contingencies					\$17,200	
09.0.1.B.	Navigation Aids in Water Total:						\$132,00

Cost Estimate with Standard Account Code

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 12.0.2.2	TOTAL PROJECT COST
12.0.2.	Pipeline Dredge (Demo Test)	1,000,000	C.Y.	0.58	\$580,000	\$87,000	\$667,000
Subtotal, Construction Costs:					\$580,000		
12.0.2.2.Contingencies						\$87,000	
12.0.2. Pipeline Dredging Total:							\$667,000

Cost Estimate with Standard Account Code

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 12.0.3.2	TOTAL PROJECT COST
12.0.3.	HOPPER DREDGE						
	Ship Island Pass (Bar)	2,589,700	C.Y.	1.27	\$3,289,000	\$493,350	\$3,782,350
	Gulf Channel	3,052,600	C.Y.	0.99	\$3,187,000	\$478,050	\$3,665,050
	Subtotal, Construction Costs:				\$6,476,000		
12.0.3.2.	Contingencies					\$971,400	
12.0.3.	Hopper Dredge Total:						\$7,447,400

Cost Estimate with Standard Account Code

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 12.0.4.2	TOTAL PROJECT COST
12.0.4.	MECHANICAL DREDGING						
	Breakwater Removal	44,000	C.Y.	LS	\$43,000	\$6,450	\$49,450
	Sound	7,854,214	C.Y.	\$2.31	18,655,000	2,798,000	21,453,00
	Subtotal, Construction Costs:				\$18,698,000		
12.0.4.2.	Contingencies					\$2,804,450	
12.0.4.	Mechanical Dredging Total:						\$21,502,450

Cost Estimate with Standard Account Code

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 12.0.6.2.	TOTAL PROJECT COST
12.0.6.	Monitoring Demo Test		JOB	LS	\$1,643,000	\$247,000	\$1,890,000
Subtotal, Construction Costs:					\$1,643,000		
12.0.6.2.Contingencies						\$247,000	
12.0.6. Monitoring Demo Test Total:							\$1,890,000

COST ESTIMATE SUMMARY FOR REAL ESTATE REPORT

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 07.C.C.D. ATTORNEY'S OPINION

Budget Category -->	(1)	(1)	(5)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule												
Organization												
	----- IN HOUSE -----											
	(<--- Direct Labor --->)											
	Workyear Cost Tech/Indirect General Admin Direct Charge Facility Ch Payments Other for Account Other for Account											
	Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate											
	02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D. 02.C.C.D.											
REAL ESTATE DIV	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,036	\$184	\$2,020
Acquisition Br	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,036	\$184	\$2,020
Totals	0.02	\$1,136	\$409	\$291	\$0	\$0	\$0	\$0	\$0	\$1,036	\$184	\$2,020

02-Aug-89

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	Total Contingency	Total
From Org Budget									for	Cost for
Schedule									Account	Account
Organization									01.C.1.	01.C.1.
	(-- Direct Labor --)		IM HOUSE		Other	Direct Pro	Contract	-- Government --	Estimate	
	Workyear Cost	Tech/Indirect General Admin	Overhead		Charge	Facility Ch	Payments	Other	for Account	
	Estimate	Estimate	Estimate		Estimate	Estimate	(A/E, RE, Con)	Corps Agencies	01.C.1.	01.C.1.

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02-Aug-89

02-Aug-89

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	<----->	-- Direct Labor --><----->	Overhead	IN HOUSE	Other	Direct Proj	Contract	OUTSIDE POA	Government	Total Estimate	Contingency for Account	Total Cost for Account
Organization	Workyear	Cost	Tech/Indirect	General Admin	Direct Charge Facility Ch	Estimate	Payments	Other	Other Agencies	01.C.2.	01.C.2.	01.C.2.
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate						
REAL ESTATE DIV	0.01	\$568	\$204	\$145	\$0	\$0	\$0	\$0	\$0	\$918	\$92	\$1,010
Acquisition Br	0.01	\$568	\$204	\$145	\$0	\$0	\$0	\$0	\$0	\$918	\$92	\$1,010
Totals	0.01	\$568	\$204	\$145	\$0	\$0	\$0	\$0	\$0	\$918	\$92	\$1,010

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 01-C-3. NEGOTIATE LCA

01.C.3. NEGOTIATE CDA													
ACCOUNT CODE:	Budget Category -->	(1)	(1)	(5)	(10)	(12-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	(-- Direct Labor -->)	(-- Tech/Indirect Cost Estimate	Overhead -->	Other Direct Charge Estimate	Admin General Estimate	Other Facility Ch Payments Estimate	Direct Proj Estimate	Contract Payments	OUTSIDE POA	-- Government Other Agencies	Total Estimate	Contingency for Account	Total Cost for Account
Organization	Workyear Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Corps	Estimate	01.C.3.	01.C.3.	01.C.3.
REAL ESTATE DIV Acquisition Br	0.01	\$403	\$145	\$103	\$68	\$0	\$0	\$0	\$0	\$0	\$719	\$72	\$791
	0.01	\$403	\$145	\$103	\$68	\$0	\$0	\$0	\$0	\$0	\$719	\$72	\$791
Totals	0.01	\$403	\$145	\$103	\$68	\$0	\$0	\$0	\$0	\$0	\$719	\$72	\$791

02-Aug-89

Gulfport harbor, MS

01.D.1. ATTORNEY'S OPINION												
ACCOUNT CODE:	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
Organization	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
REAL ESTATE DIV												
Acquisition Br	0.01	\$446	\$161	\$114	\$34	\$0	\$0	\$0	\$0	\$754	\$75	\$829
	0.01	\$446	\$161	\$114	\$34	\$0	\$0	\$0	\$0	\$754	\$75	\$829
Totals	0.01	\$446	\$161	\$114	\$34	\$0	\$0	\$0	\$0	\$754	\$75	\$829

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 01.D.2. MAPPING, SURVEY & TRACT OWNERSHIP

Budget Category -->	(1)	(1)	(9)	(10)	(12-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule												
-- Direct Labor -->			Overhead		Other	Direct Proj	Contract	<-- Government	-->	Total Estimate	Contingency for Account	Total Cost for Account
Workyear Estimate	Estimate	Cost Estimate	Tech/Indirect Estimate	General Admin Estimate	Charge Estimate	Facility Ch Estimate	Payments	Other Agencies		for Account	Account	
Organization							(A/E,R,R,Con)	Corps		01.D.2.	01.D.2.	01.D.2.
REAL ESTATE DIV Acquisition Br	0.01	\$770	\$277	\$197	\$34	\$0	\$0	\$0	\$0	\$1,278	\$128	\$1,406
	0.01	\$770	\$277	\$197	\$34	\$0	\$0	\$0	\$0	\$1,278	\$128	\$1,406
Totals	0.01	\$770	\$277	\$197	\$34	\$0	\$0	\$0	\$0	\$1,278	\$128	\$1,406

02-Aug-89

Gulfport Harbor, MS

PROJECT:
ACCOUNT CODE:

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule												
Organization												
REAL ESTATE DIV												
Acquisition Br	0.01	\$244	\$88	\$62	\$0	\$0	\$0	\$0	\$0	\$394	\$39	\$433
	0.01	\$244	\$88	\$62	\$0	\$0	\$0	\$0	\$0	\$394	\$39	\$433
Totals	0.01	\$244	\$88	\$62	\$0	\$0	\$0	\$0	\$0	\$394	\$39	\$433

02-Aug-89

[illegible]

	0-07	\$1,713	\$624	\$443	\$0	\$0	\$2,800	\$3,010
...								

[illegible]

02-Aug-89

Gulfport Harbor, MS

01.K. TEMPORARY PERMITS

[illegible][illegible]

C-2-22

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN REPORT

02-Aug-89

PROJECT: Gulfport Harbor, MS												
ACCOUNT CODE: 30.A. Planning												
Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	(-- Direct Labor --)	Overhead	1W HOUSE			Direct Proj	Contract	OUTSIDE POA		Total Estimate	Contingency for Account	Total Cost for Account
Schedule	Workyear	Cost	Tech/Indirect	General Admin	Other Charge	Facility Ch	Payments	Other	Other	for Account	Account	30.A.
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Corps	Agencies	30.A.	30.A.	30.A.
PLANNING DIV	0.05	\$2,500	\$1,275	\$576	\$204	\$500		\$0	\$0	\$5,055	\$1,011	\$6,066
Coastal Section	0.05	\$2,500	\$1,275	\$576	\$204	\$500		\$0	\$0	\$5,055	\$1,011	\$6,066
Totals	0.05	\$2,500	\$1,275	\$576	\$204	\$500		\$0	\$0	\$5,055	\$1,011	\$6,066

**COST ESTIMATE FOR ENGINEERING AND DESIGN EFFORT
GULFPORT HARBOR, MISSISSIPPI**

SUMMARY OF 30.B. ACCOUNT

ENGINEERING PRIOR TO 1 OCTOBER 1989

ACCOUNT CODE	ITEM	AMOUNT
30.B.-.-	ENGINEERING PRIOR TO 1 OCTOBER 1989	
30.B.1.-	Contractor's Earnings	\$754,300
30.B.4.-	Design by this District	1,104,700
30.B.5.-	Design by Other Districts	107,700
30.B.6.-	Design by Other Government Elements	1,800
30.B.9.-	E&D Real Estate Activities	2,300

30.B.-.-	TOTAL	\$1,970,800

SI-AOM-20

Gulfport Harbor, MS

30.2.1. Engineering Prior to 1 October 1989

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget												
Schedule												
Organization												
CONTRACTOR'S	0	\$0	\$0	\$0	\$0	\$0	\$754,300	\$0	\$0	\$754,300	\$0	\$754,300
EARNINGS	0	\$0	\$0	\$0	\$0	\$0	\$754,300	\$0	\$0	\$754,300	\$0	\$754,300
Totals	0	\$0	\$0	\$0	\$0	\$0	\$754,300	\$0	\$0	\$754,300	\$0	\$754,300

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.B.4. Design by this District (H20)

PROJECT:

ACCOUNT CODE:

Culport Harbor, MS

30.2.4. Design by this District (NDO)

02-Nov 8.

Budget Category -->	(1)	(11)	(9)	(10)	(7-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<---			IN HOUSE				OUTSIDE POA				
Schedule	-- Direct Labor -->			Overhead				<--- Government --->				
Organization	Workyear Cost Estimate		Tech/Indirect Estimate	General Admin Estimate	Direct Charge Estimate	Proj Facility Estimate	Contract Ch Payments	Other Corps Agencies		Total Estimate for Account 30.B.4.	Contingency for Account 30.B.4.	Total Cost for Account 30.B.4.
PRIOR TO 1 OCT 89	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,104,700	\$0	\$1,104,700
	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,104,700	\$0	\$1,104,700
Totals	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,104,700	\$0	\$1,104,700

C-2-26

02-Nov-89

Gulfport Harbor, MS

30.3.5. Design by Other Districts

C-2-27

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

02-Nov-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.B.6. Design by Other Government Elements

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget				IN HOUSE				OUTSIDE POA		Total Estimate	Contingency for Account	Total Cost for Account
Schedule		(-- Direct Labor --)	(-- Overhead --)		Other Charge	Direct Proj Facility Ch	Contract Payments	-- Government --	Other for Account	30.B.6.	30.B.6.	30.B.6.
Organization		Yearly Cost Estimate	Tech/Indirect Estimate	General Admin Estimate	Direct Charge Estimate	Estimate	(A/E, B/E, Con)	Corps Agencies	30.B.6.	30.B.6.	30.B.6.	30.B.6.
DESIGN BY OTHER	0	50	30	50	50	50	50	50	50	51,000	50	51,000
GOVERNMENT ELEMENTS	0	30	30	30	30	30	30	30	30	31,000	30	31,000
Totals	0	50	30	50	50	50	50	50	50	81,000	50	81,000

02-Nov-83

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 10.B.5. E&D Real Estate Activities

Gulfozt Warbor, MS

30.2.5. USD Real Estate Activities

Budget Category -->	(1)	(11)	(9)	(10)	(7-8)	--> (5)	--> (6)	OUTSIDE FOA	--> (3)	Total Contingency for	Total
From Org Budget Schedule				IN HOUSE		Direct Proj Facility Ch Estimate (A/E,BB,Con)	Other Direct Charge Estimate	Contract Payments	-- Government Other Corps Agencies	Estimate for Account	Account
Organization											
EAD REAL ESTATE ACTIVITIES	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,300	\$0 \$2,300
Totals	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,300	\$0 \$2,300

Totals

02-Aug-88

02-Aug-88

02-Aug-88

21-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.C.B. Final LCA and Financial Plan

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	-- Direct Labor -->	IM HOUSE	Overhead	Admin	Direct Charge Facility Ch Payments	Contract	OUTSIDE POA	-- Government -->	Other Agencies	Total Estimate for Account 30.C.B.	Contingency for Account 30.C.B.	Total Cost for Account 30.C.B.
Organization	Workyear Estimate	Tech/Indirect General Admin Estimate	Estimate	Estimate	Estimate	Estimate (A/E, RE, Con)						
PLANNING DIV												
Plan Formulation Br												
Economic Analysis	0.03	\$2,472	\$1,261	\$575	\$560	\$150	\$0	\$0	\$0	\$5,018	\$502	\$5,520
Coastal Section	0.02	\$1,240	\$632	\$288	\$0	\$500	\$0	\$0	\$0	\$2,661	\$539	\$3,200
Eastern Basins	0.02	\$1,000	\$510	\$233	\$0	\$500	\$0	\$0	\$0	\$2,243	\$457	\$2,700
.	0.07	\$4,712	\$2,403	\$1,096	\$560	\$1,150	\$0	\$0	\$0	\$9,922	\$1,498	\$11,420
OFFICE OF COUNSEL												
	0.01	\$216	\$110	\$50	\$0	\$0	\$0	\$0	\$0	\$376	\$100	\$476
	0.01	\$216	\$110	\$50	\$0	\$0	\$0	\$0	\$0	\$376	\$100	\$476
Totals	0.08	\$4,928	\$2,513	\$1,146	\$560	\$1,150	\$0	\$0	\$0	\$10,298	\$1,598	\$11,896

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.C.1 LCA Negotiations

[illegible][illegible]

Totals	0.01	\$750	\$183	\$0	\$0	\$1,307	\$293	\$1,600
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COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.D.2. 401,404, and 800

Budget Category -->	(11)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget				IN HOUSE				OUTSIDE POA				
Schedule				Overhead	Other	Direct Proj	Contract	-- Government	--	Total Estimate	Contingency	Total
Worlyear				Tech/Indirect	General Adm	Facility Ch	Payments	Other	for Account	30.D.2.	30.D.2.	30.D.2.
Estimate				Estimate	Estimate	Estimate	(A/E, R, Con)	Corps	Agencies	30.D.2.	30.D.2.	30.D.2.
Organization												
PLANNING DIV												
Environment and												
Resources Branch												
Coastal Environment												
Section												
0.08	\$4,640	\$2,591	\$1,182	\$945	\$0	\$0	\$0	\$0	\$0	\$8,897	\$1,335	\$10,232
0.08	\$4,640	\$2,591	\$1,182	\$945	\$0	\$0	\$0	\$0	\$0	\$8,897	\$1,335	\$10,232
Totals	0.08	\$4,640	\$2,591	\$1,182	\$945	\$0	\$0	\$0	\$0	\$8,897	\$1,335	\$10,232

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

02-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.D.4. Fish and Wildlife Coordination Act

Budget Category -->	(1)	(1)	(9)	(10)	(12-1)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget												
Schedule												
Organization												
PLANNING DIV												
Environment and												
Resources Branch												
Coastal Environment												
Section												
	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$0	\$10,000
	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$0	\$10,000
Totals	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$0	\$10,000

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

05-Aug-89

PROJECT: Gulfport Harbor, HS
ACCOUNT CODE: 30.D.5 Coastal Zone Consistency

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget												
Schedule												
Organization												
PLANNING DIV												
Environment and												
Resources Branch												
Coastal												
Environment Sec												
Totals												

02-Act-89

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget												
Schedule												
Organization												
	<---	Direct Labor -->	<-----	Overhead ----->	Other	Direct Proj	Contract	OUTSIDE POA ----->		Estimate	Total Contingency for Account	Total Cost for Account
		Workyear Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Payments	Other	Other	for Account	Account	
		Estimate	Estimate	Estimate	Estimate	Estimate	(A/B,RR,Con)	Corps	Agencies	30.0.6.4.	30.0.6.4.	30.0.6.4.

[illegible]

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30-B-6.7 Prestressing Design P13

02-02-19

C-2-37

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.D.D. Environmental Coordination

PROJECT:

ACCOUNT CODE:

Gulfport Harbor, MS

30.D.D. Environmental Coordination

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<----->			IM MOUSE				OUTSIDE POA				
Schedule	(-- Direct Labor --)			Overhead								
	Cost		Tech/Indirect	General Admin	Direct Charge	Facility Ch	Payments	Contract	-- Government --	Estimate	Contingency for	Total Cost for Account
Organization	Estimate		Estimate	Estimate	Estimate	Estimate	(A/B, 88, Con)	Corps	Agencies	30-D.D.	30-D.D.	30-D.D.

PLANNING DIV

Environment and

James Branch

Coastal

Environment Sec

Totals

0.14	\$8,700	\$4,886	\$2,228	\$0	\$0	\$16,919	\$2,537	\$19,456
Totals								

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS													02-Aug-89
ACCOUNT CODE: 30.R.1. Design Related Engineering (Subsurface Explorations)													
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)	
From Org Budget													
Schedule													
	(<--- Direct Labor ---> Tech/Indirect General Admin Direct Charge Facility Ch Payments Other Government ---> OUTSIDE FOA ---> Total Contingency Total												
Organization	Estimate	Cost	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Account	Cost for	
											30.R.1.	30.R.1.	
ENGINEERING DIV													
Geotechnical and													
Materials Branch													
Soils Design	0.06	\$2,040	\$1,183	\$475	\$0	\$250	\$0	\$0	\$0	\$3,948	\$0	\$3,948	
	0.06	\$2,040	\$1,183	\$475	\$0	\$250	\$0	\$0	\$0	\$3,948	\$0	\$3,948	
Totals	0.06	\$2,040	\$1,183	\$475	\$0	\$250	\$0	\$0	\$0	\$3,948	\$0	\$3,948	

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.B.2. Sampling, Testing and Analysis

68-687-50

PROJECT: Gulfport Harbor, MS													05-Aug-89	
ACCOUNT CODE: 30.B.2. Sampling, Testing and Analysis														
Budget Category -->	(1)	(1)	(3)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)		
Proc Org Budget	<----->			IN HOUSE			<----->			OUTSIDE POA				
Schedule	{-- Direct Labor --}			Overhead			{-->			Total				
	Workyear	Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Contract	-- Government	Other	for Account	Contingency	Cost for		
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	(A/R, R/R, Con)	Corps	Agencies	30.B.2.	30.B.2.	30.B.2.		

OPERATIONS DIV														
Project Operations														
Branch														
Navigation Sec &														
Dredged Material														
Mgmt Sec														
0.04	\$2,160	\$1,836	\$1,020	\$120	\$0	\$0	\$0	\$0	\$0	\$5,406	\$811	\$6,217		
0.04	\$2,160	\$1,836	\$1,020	\$120	\$0	\$0	\$0	\$0	\$0	\$5,406	\$811	\$6,217		

Totals														
0.04	\$2,160	\$1,836	\$1,020	\$120	\$0	\$0	\$0	\$0	\$0	\$5,406	\$811	\$6,217		

02-Aug-89

PreDesign Investigations

C-2-41

92-249-89

[illegible][illegible][illegible]

12-Aug-89

PROJECT: **ACCOUNT CODE:** **10 P.P. Valve Engineering (2A) Studies**
COMPONENT NUMBER:

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PLANNING DIV
Environment and
Resources Branch
Coastal
Environment

THE CHINESE DIV

Value Based Office

Totals	0.33	\$22,310	\$12,835	\$5,221	\$92	\$0	\$0	\$0	\$40,466	\$4,248	\$60,710
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ENGINEERING AND DESIGN DEPARTMENT

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.M.B. Final Design

106-67-61

Budget Category -->	(1)	(11)	(9)	(10)	(7 4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	(-- Direct Labor --)	Overhead	IN HOUSE	Admin	Direct Proj	Contract	OUTSIDE FOA	Contract	Other	Estimate	Contingency	Total
Workyear Cost Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
PLANNING DIV												
Environment and Resources Branch												
Coastal Environment	0.02	\$1,160	\$592	\$270	\$0	\$0	\$0	\$0	\$0	\$7,021	\$103	\$7,324
	0.02	\$1,160	\$592	\$270	\$0	\$0	\$0	\$0	\$0	\$7,021	\$103	\$7,324
ENGINEERING DIV												
Geotechnical and Materials Branch												
Salls Design	0.03	\$1,777	\$1,031	\$413	\$0	\$70	\$0	\$0	\$0	\$3,241	\$0	\$3,241
Hydrology and Hydraulics Branch												
Coastal Engr & Hydraulics	0.42	\$27,520	\$15,962	\$6,401	\$460	\$4,580	\$0	\$0	\$0	\$54,843	\$8,226	\$63,069
Structural & Gen Engrg Branch												
Specifications & Change Order	0.02	\$1,000	\$1,334	\$644	\$100	\$1,080	\$0	\$0	\$0	\$4,278	\$428	\$4,706
Engrg Support	0.02	\$398	\$289	\$139	\$0	\$188	\$0	\$0	\$0	\$926	\$93	\$1,019
	0.49	\$30,695	\$18,616	\$7,597	\$760	\$5,620	\$0	\$0	\$0	\$63,288	\$8,747	\$72,035
CONSTRUCTION DIV												
Quality Assurance Branch												
Tech. Support	0.01	\$320	\$112	\$76	\$211	\$98	\$0	\$0	\$0	\$888	\$160	\$958
	0.01	\$320	\$112	\$76	\$211	\$98	\$0	\$0	\$0	\$888	\$160	\$958
Totals	0.52	\$32,175	\$19,320	\$7,943	\$971	\$5,718	\$0	\$0	\$0	\$66,117	\$9,210	\$75,327

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN REPORT

(Continued)

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30-H.G. Bidability, Constructability and Operability Review

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule				IM MOUSE				OUTSIDE POA				
		-- Direct Labor -->	Overhead			Direct Proj	Contract	-- Government -->				
Organization		Yearly Cost Estimate	Tech/Indirect Estimate	General Admin Estimate	Other Charge Estimate	Facility Ch Estimate	Payments	Other	Agencies	for Account	Contingency for Account	Total Cost for Account
							(A/G, S2, Con)	Corps	30 M.R.	30 M.R.	30 M.R.	30 M.R.
OPERATIONS DIV												
Proj Ops Branch												
Nav & Mob Area	0.02	\$1,154	\$831	\$462	\$0	\$0	\$0	\$0	\$0	\$2,447	\$245	\$2,692
	0.02	\$1,154	\$831	\$462	\$0	\$0	\$0	\$0	\$0	\$2,447	\$245	\$2,692
PROGRAM MGMT OFFICE												
Program Mgmt Sec	0.01	\$249	\$187	\$58	\$0	\$0	\$0	\$0	\$0	\$493	\$99	\$592
	0.01	\$249	\$187	\$58	\$0	\$0	\$0	\$0	\$0	\$493	\$99	\$592
Totals	0.14	\$7,708	\$5,426	\$2,478	\$346	\$1,090	\$0	\$0	\$0	\$17,046	\$2,012	\$19,058

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS **03-Aug-89**
ACCOUNT CODE: 30.J.2. Periodic Inspections

Budget Category -->	(1)	(11)	(9)	(10)	(12-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget				IN HOUSE				OUTSIDE POA			Total Contingency	Total
Schedule						Direct Proj	Contract	-- Government -->		Estimate	for Account	Cost for
					Other	Charge Facility Ch	Payments	Other	Other	for Account	Account	Account
Organization					Estimate	Estimate	Estimate (A/R,RR,Con)	Corps	Agencies	30.J.2.	30.J.2.	30.J.2.

PLANNING DIV

Environment and Resources Branch												
Coastal Environment	0.04	\$2,320	\$1,183	\$540	\$0	\$0	\$0	\$0	\$0	\$4,043	\$686	\$4,649
	0.04	\$2,320	\$1,183	\$540	\$0	\$0	\$0	\$0	\$0	\$4,043	\$686	\$4,649

ENGINEERING DIV

Geotechnical and Materials Branch												
Solids Design	0.02	\$1,111	\$644	\$258	\$240	\$10	\$0	\$0	\$0	\$2,263	\$0	\$2,263
Hydrology and Hydraulics Branch												
Coastal Engrg & Hydraulic Design	0.01	\$528	\$306	\$123	\$68	\$0	\$0	\$0	\$0	\$1,025	\$154	\$1,178
	0.03	\$1,639	\$950	\$381	\$308	\$10	\$0	\$0	\$0	\$3,288	\$154	\$3,441

PROGRAM MGMT OFFICE

Prog Mgmt Sec	0.01	\$498	\$373	\$116	\$0	\$0	\$0	\$0	\$0	\$987	\$197	\$1,184
	0.01	\$498	\$373	\$116	\$0	\$0	\$0	\$0	\$0	\$987	\$197	\$1,184
Totals	0.08	\$4,457	\$2,506	\$1,037	\$308	\$10	\$0	\$0	\$0	\$8,318	\$957	\$9,274

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS												
ACCOUNT CODE: 10.M. Cost Engineering												
01-Aug-89												
Budget Category -->	(1)	(11)	(9)	(10)	(12-4)	(5)	(7)	(8)	(11)	(12)	(13)	
From Org Budget												
Schedule												
Organization												
PLANNING DIV												
Environment and Resources Branch												
Coastal Envrnat	0.02	\$1,160	\$592	\$270	\$0	\$0	\$0	\$0	\$2,021	\$303	\$2,324	
	0.02	\$1,160	\$592	\$270	\$0	\$0	\$0	\$0	\$2,021	\$303	\$2,324	
ENGINEERING DIV												
Geotechnical and Materials Branch												
Sells Design	0.01	\$226	\$131	\$53	\$0	\$0	\$0	\$0	\$410	\$0	\$410	
Hydrology and Hydraulics Branch												
Coastal Engrg & Hydraulic Design	0.04	\$2,904	\$1,684	\$675	\$0	\$0	\$0	\$0	\$5,264	\$736	\$6,000	
Structural & Gen Engrg Branch	0.03	\$1,680	\$974	\$470	\$0	\$0	\$0	\$0	\$3,124	\$312	\$3,436	
Coast Engineering												
Civ Engr Prog Dev & Mgmt Branch	0.01	\$679	\$581	\$280	\$263	\$60	\$0	\$0	\$1,862	\$186	\$2,048	
Project Mgmt	0.09	\$5,489	\$3,370	\$1,478	\$263	\$60	\$0	\$0	\$10,660	\$1,234	\$11,894	
OPERATIONS DIV												
Proj Operations Br Navigation	0.07	\$3,780	\$2,722	\$1,540	\$120	\$0	\$0	\$0	\$8,162	\$1,632	\$9,794	
	0.07	\$3,780	\$2,722	\$1,540	\$120	\$0	\$0	\$0	\$8,162	\$1,632	\$9,794	
PROGRAM MGMT OFFICE												
Program Mgmt Sec	0.1	\$4,246	\$3,185	\$988	\$0	\$0	\$0	\$0	\$8,416	\$1,684	\$10,102	
	0.1	\$4,246	\$3,185	\$988	\$0	\$0	\$0	\$0	\$8,416	\$1,684	\$10,102	

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS													05-Aug-89
ACCOUNT CODE: 30.M.I. Preparation of Bid Documents													
Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)	
From Org Budget													
Schedule													
Organization													

ENGINEERING DIV													
Civ Wts Prog Dev &													
Mgmt Branch													
Civ Wts Proj Mgmt	0.01	\$452	\$262	\$127	\$0	\$0	\$0	\$0	\$0	\$842	\$84	\$926	
Structural & Gen													
Enging Branch	0.01	\$457	\$265	\$128	\$0	\$0	\$0	\$0	\$0	\$850	\$85	\$935	
Specs & C/O	0.02	\$909	\$527	\$255	\$0	\$0	\$0	\$0	\$0	\$1,692	\$169	\$1,861	

Totals	0.02	\$909	\$527	\$255	\$0	\$0	\$0	\$0	\$0	\$1,692	\$169	\$1,861	

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.M.3. Contracting Office Activities

05-Aug-89

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule												
(-- Direct Labor --)												
Workyear Cost												
Estimate Estimate												
Organization												
CONTRACTING DIV												
Procurement Branch												
Contract Section	0.04	\$2,000	\$430	\$510	\$0	\$0	\$0	\$0	\$0	\$2,941	\$294	\$3,235
	0.04	\$2,000	\$430	\$510	\$0	\$0	\$0	\$0	\$0	\$2,941	\$294	\$3,235
Totals	0.04	\$2,000	\$430	\$510	\$0	\$0	\$0	\$0	\$0	\$2,941	\$294	\$3,235

COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT: Gulfport Harbor, MS		23-Aug-89										
ACCOUNT CODE: 30.P. Project Management												
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	(-- Direct Labor --)		IN HOUSE					OUTSIDE POA		Total Estimate	Contingency	Total
Schedule	Yearly Cost	Tech/Indirect	Overhead	General Admin	Direct Charge	Facility Ch	Contract	Government	Other	for Account	for Account	Cost for
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
										30.P.	30.P.	30.P.
PLANNING DIV												
Plan Formulation												
Branch												
Coastal Section	0.11	\$6,000	\$3,060	\$1,382	\$254	\$0	\$0	\$0	\$0	\$10,696	\$2,139	\$12,835
	0.11	\$6,000	\$3,060	\$1,382	\$254	\$0	\$0	\$0	\$0	\$10,696	\$2,139	\$12,835
ENGINEERING DIV												
Civ Wks Prog Dev & Mgmt Branch												
Civ Wks Prog Mgmt	0.01	\$905	\$583	\$281	\$45	\$55	\$0	\$0	\$0	\$1,069	\$107	\$2,056
	0.01	\$905	\$583	\$281	\$45	\$55	\$0	\$0	\$0	\$1,069	\$107	\$2,056
PROGRAM MGMT OFFICE												
Program Mgmt Sec	0.31	\$18,086	\$13,565	\$4,214	\$0	\$0	\$0	\$0	\$0	\$35,865	\$7,173	\$43,038
	0.31	\$18,086	\$13,565	\$4,214	\$0	\$0	\$0	\$0	\$0	\$35,865	\$7,173	\$43,038
Totals	0.43	\$24,991	\$17,208	\$5,877	\$299	\$55	\$0	\$0	\$0	\$48,430	\$9,499	\$57,929

PROJECT:
ACCOUNT CODE:

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 30.2.1.0

Budget Category: 30.2.1.0
Miscellaneous Activities

23-Aug-89

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	Workyear Estimate	Direct Labor Cost Estimate	Overhead Estimate	General Admin Estimate	Other Direct Charge Estimate	Direct Proj Facility Ch Estimate	Contract Payments (A/E, RE, Con)	OUTSIDE POA -- Government Other Corps	Other Agencies	Total Estimate for Account 30.2.1.0	Contingency for Account 30.2.1.0	Total Cost for Account 30.2.1.0
Organization												
PLANNING DIV												
Plan Formulation Branch												
Economic Analysis	0.02	\$732	\$373	\$170	\$0	\$0	\$0	\$0	\$0	\$1,275	\$255	\$1,530
	0.02	\$732	\$373	\$170	\$0	\$0	\$0	\$0	\$0	\$1,275	\$255	\$1,530
PROGRAM MGMT OFFICE												
Program Mgmt Sec	0.85	\$36,071	\$27,053	\$8,404	\$0	\$0	\$0	\$0	\$0	\$71,528	\$14,306	\$85,834
	0.85	\$36,071	\$27,053	\$8,404	\$0	\$0	\$0	\$0	\$0	\$71,528	\$14,306	\$85,834
Totals	0.87	\$36,803	\$27,426	\$8,574	\$0	\$0	\$0	\$0	\$0	\$72,803	\$14,561	\$87,364

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.B.1. Pre-Award Activities

03-Aug-89

C-2-54

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.B.2. Award Activities

Gulfpport Harbor, May 7.
31.8.2. Award Activities

03-JUN-89

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
Free Org Budget	(-- Direct Labor --)	(-- Overhead --)	IN HOUSE	Direct Proj	Contract	OUTSIDE POA	Government	Other	Estimate	Total	Contingency	Total
Schedule	Workyear	Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Payments	Other	for Account	Estimate	for Account	Cost for
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	(A/B,RE,Com)	Corps	Agencies	31.8.2.	31.8.2.	31.8.2.	31.8.2.
CONSTRUCTION DIV												
Construction												
Contract Admin Br	0.01	\$140	\$59	\$35	\$95	\$0	\$0	\$0	\$0	\$019	\$84	\$503
	0.01	\$140	\$59	\$35	\$95	\$0	\$0	\$0	\$0	\$019	\$84	\$503
Totals	0.01	\$140	\$59	\$35	\$95	\$0	\$0	\$0	\$0	\$019	\$84	\$503

COST ESTIMATE SUMMARY FOR CONSTRUCTION REPORT

PROJECT: Gulfport Harbor, MS		03-Aug-89										
ACCOUNT CODE: 31.B.3. Review and Approval of Contract Payments												
Budget Category -->	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
From Org Budget	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Schedule	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Organization	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CONSTRUCTION DIV	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Construction	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Contract Admin Br	0.02	\$720	\$333	\$198	\$100	\$1,000	\$0	\$0	\$2,000	\$4,403	\$001	\$5,204
	0.02	\$720	\$333	\$198	\$100	\$1,000	\$0	\$0	\$2,000	\$4,403	\$001	\$5,204
Totals	0.02	\$720	\$333	\$198	\$100	\$1,000	\$0	\$0	\$2,000	\$4,403	\$001	\$5,204

COST ESTIMATE SUMMARY FOR CONSTRUCTION REPORT

PROJECT:	Gulfport Harbor, MS	03-Aug-89
ACCOUNT CODE:	31.B.4. Contract Modifications	
Budget Category -->	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
From Org Budget	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
Schedule	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
Organization	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
CONSTRUCTION DIV	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
Construction	(11) (1) (9) (10) (2-4) (5) (6) (7) (8) (11) (12) (13)	
Contract Admin Br	0.09 \$5,400 \$2,268 \$1,350 \$1,262 \$6,480 \$0 \$0 \$0 \$16,160 \$3,232 \$19,392	
	0.09 \$5,400 \$2,268 \$1,350 \$1,262 \$6,480 \$0 \$0 \$0 \$16,160 \$3,232 \$19,392	
Totals	0.09 \$5,400 \$2,268 \$1,350 \$1,262 \$6,480 \$0 \$0 \$0 \$16,160 \$3,232 \$19,392	

COST ESTIMATE SUMMARY FOR CONSTRUCTION EFFORT

PROJECT: Gulfport Harbor, MS												03-Aug-89
ACCOUNT CODE: 31.B.5. Progress and Completion Reports												
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget												
Schedule												
	<div style="display: flex; justify-content: space-between;"> (-- Direct Labor -->) IN HOUSE OUTSIDE POA </div>											
	<div style="display: flex; justify-content: space-between;"> Yearly Cost Overhead Direct Proj Contract Government Other Estimate for Account Total </div>											
Organization	<div style="display: flex; justify-content: space-between;"> Estimate Estimate Estimate Estimate Estimate Estimate Estimate Estimate </div>											
CONSTRUCTION DIV												
Quality Assurance	0.15	\$9,360	\$3,931	\$2,340	\$600	\$56,160	\$0	\$0	\$0	\$71,791	\$14,358	\$86,149
Branch	0.15	\$9,360	\$3,931	\$2,340	\$600	\$56,160	\$0	\$0	\$0	\$71,791	\$14,358	\$86,149
Totals	0.15	\$9,360	\$3,931	\$2,340	\$600	\$56,160	\$0	\$0	\$0	\$71,791	\$14,358	\$86,149

COST ESTIMATE SUMMARY FOR CONSTRUCTION REPORT

12-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.B.9. All Other Activities

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget				IN HOUSE				OUTSIDE FOR				
Schedule	(-- Direct Labor --)		Overhead			Direct Proj	Contract	<-- Government -->		Total Estimate	for Account	Total
Organization	Workyear	Cost	Tech/Indirect	General Admin	Other Charge	Facility Ch	Payments	Other	Agencies	31.B.9.	31.B.9.	31.B.9.
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	(A/B,RE,Con)	Corps				
CONSTRUCTION DIV												
Construction												
Programs Branch	0.17	\$12,600	\$5,292	\$3,150	\$2,393	\$0	\$0	\$0	\$0	\$23,435	\$4,687	\$28,122
Civil Management	0.17	\$12,600	\$5,292	\$3,150	\$2,393	\$0	\$0	\$0	\$0	\$23,435	\$4,687	\$28,122
SAFETY & OCCUPATIONAL HEALTH												
Safety Office	0.01	\$250	\$54	\$64	\$0	\$0	\$0	\$0	\$0	\$368	\$37	\$405
	0.01	\$250	\$54	\$64	\$0	\$0	\$0	\$0	\$0	\$368	\$37	\$405
totals	0.18	\$12,850	\$5,346	\$3,214	\$2,393	\$0	\$0	\$0	\$0	\$23,803	\$4,724	\$28,527

03-July-89

Gulfport Harbor, MS

31.D. Review of Shop Drawings

(1)	(2)	(3)	(4)	(5)	(6)	(7)
						OVERTIME PAID ----->
	(9)	(10)	(2-4)	(5)	(6)	(7)
						Total Cost/Injury ----->
						Total Cost/Injury Total ----->

IN HOUSE	OUTSIDE	Estimate for	Cost for
-----	-----	Contract	Contract
<-----	-----	Direct Proj	Estimate
		Contract	Contract

(-- Direct Labor --)	(----- Overhead -----)	Other	Direct Flg) Contact	Other	for Account	Account
			Payments	Ch	Facility	Account
			General	Ad-	Charge	Account

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estimate	estimate	estimate	estimate
estimate	estimate	estimate	estimate

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0.15	\$10,920	\$4,516	\$2,130	\$1,393	\$14,010
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	\$0	\$0	\$0	\$6,604	\$39,523
-----	-----	-----	-----	-----	-----
	\$14,040	\$0	\$0	\$33,019	\$0
	\$1,143	\$2,770	\$4,506		

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COST ESTIMATE SUMMARY FOR CONSTRUCTION EFFORT

PROJECT: Gulfport Harbor, MS													03-Aug-89
ACCOUNT CODE: 31.E.1. Schedule Compliance													
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)	
From Org Budget													
Schedule													

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.8.2. Compliance Sampling and Testing

05-209-03

Budget Category -->	(1)	(1)	(9)	(10)	(7-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	(-- Direct Labor --)	IM HOUSE	Overhead	Admin	Direct Charge	Direct Proj	Contract	-- Government	-->	Total Estimate	Contingency for	Total
Schedule	Year	Tech/Indirect	General	Estimate	Estimate	Estimate	Payments	Other	Other	for Account	Account	Cost for
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	(M/R,RE,Con)	Corps	Agencies	31.R.2.	31.R.2.	31.R.2.
PLANNING DIV												
Environment and												
Resources Branch												
Coastal												
Environment Sec	0.02	\$1,160	\$592	\$460	\$0	\$0	\$50,000	\$0	\$0	\$52,211	\$7,800	\$60,011
	0.02	\$1,160	\$592	\$460	\$0	\$0	\$50,000	\$0	\$0	\$52,211	\$7,800	\$60,011
Totals	0.02	\$1,160	\$592	\$460	\$0	\$0	\$50,000	\$0	\$0	\$52,211	\$7,800	\$60,011

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.E.3. Quantity Surveys

03-Aug-89

C-2-63

12-Aug-89

Gulfport Harbor, MS

Workyear Estimate	Direct Labor Cost Estimate	Overhead Estimate	Tech/Indirect General Admin Estimate	Other Direct Charge Estimate	Direct Proj Facility Ch Estimate	Contract Payments Estimate	OUTSIDE POA Government Other Corps Agencies	Total Estimate for Account 31.E.9.	Contingency for Account 31.E.9.	Total Cost for Account 31.E.9.
WY 1970	100	100	100	100	100	100	100	100	100	100
WY 1971	100	100	100	100	100	100	100	100	100	100
WY 1972	100	100	100	100	100	100	100	100	100	100
WY 1973	100	100	100	100	100	100	100	100	100	100
WY 1974	100	100	100	100	100	100	100	100	100	100
WY 1975	100	100	100	100	100	100	100	100	100	100
WY 1976	100	100	100	100	100	100	100	100	100	100
WY 1977	100	100	100	100	100	100	100	100	100	100
WY 1978	100	100	100	100	100	100	100	100	100	100
WY 1979	100	100	100	100	100	100	100	100	100	100
WY 1980	100	100	100	100	100	100	100	100	100	100
WY 1981	100	100	100	100	100	100	100	100	100	100
WY 1982	100	100	100	100	100	100	100	100	100	100
WY 1983	100	100	100	100	100	100	100	100	100	100
WY 1984	100	100	100	100	100	100	100	100	100	100
WY 1985	100	100	100	100	100	100	100	100	100	100
WY 1986	100	100	100	100	100	100	100	100	100	100
WY 1987	100	100	100	100	100	100	100	100	100	100
WY 1988	100	100	100	100	100	100	100	100	100	100
WY 1989	100	100	100	100	100	100	100	100	100	100
WY 1990	100	100	100	100	100	100	100	100	100	100
WY 1991	100	100	100	100	100	100	100	100	100	100
WY 1992	100	100	100	100	100	100	100	100	100	100
WY 1993	100	100	100	100	100	100	100	100	100	100
WY 1994	100	100	100	100	100	100	100	100	100	100
WY 1995	100	100	100	100	100	100	100	100	100	100
WY 1996	100	100	100	100	100	100	100	100	100	100
WY 1997	100	100	100	100	100	100	100	100	100	100
WY 1998	100	100	100	100	100	100	100	100	100	100
WY 1999	100	100	100	100	100	100	100	100	100	100
WY 2000	100	100	100	100	100	100	100	100	100	100
WY 2001	100	100	100	100	100	100	100	100	100	100
WY 2002	100	100	100	100	100	100	100	100	100	100
WY 2003	100	100	100	100	100	100	100	100	100	100
WY 2004	100	100	100	100	100	100	100	100	100	100
WY 2005	100	100	100							

OCCUPATIONAL HEALTH

0.09	\$4,804	\$1,152	\$1,366	\$552	\$0	\$0	\$0	\$0	\$7,073	\$787	\$8,660
Totals											

COST ESTIMATE SUMMARY FOR CONSTRUCTION REPORT

83-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.P. Project Office Operation

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget				1M HOUSE				OUTSIDE FMA		Total Estimate	Contingency for Account	Total Cost for Account
Schedule				Overhead	Other	Direct Proj Facility Ch	Contract Payments	<-- Government	Other	for Account	Account	31.P.
Organization				Tech/Indirect General Admin	Direct Charge	Estimate	(A/B, BB, Con)	Corps Agencies		31.P.	31.P.	31.P.
CONSTRUCTION DIV												
Construction												
Programs Branch	0.03	\$2,100	\$882	\$525	\$11,125	\$4,740	\$0	\$0	\$0	\$19,172	\$3,834	\$23,006
Civil Management	0.03	\$2,100	\$882	\$525	\$11,125	\$4,740	\$0	\$0	\$0	\$19,172	\$3,834	\$23,006
Totals	0.03	\$2,100	\$882	\$525	\$11,125	\$4,740	\$0	\$0	\$0	\$19,172	\$3,834	\$23,006

62-54-11

ACCOUNT CODE: 31.P. Project Management

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C-2-66

GULFPORT HARBOR, MISSISSIPPI
Cost Estimate for 02.3. Account Code

NON-FEDERAL

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 02.3.	TOTAL PROJECT COST
02.3.	Relocation 20" Pipeline	3,500	L.P.	Job	\$2,313,250	\$206,500	\$2,519,750
	Wharf Stabilization			Job	\$2,100,000	\$0	\$2,100,000
	Subtotal, Construction Costs:				\$4,413,250		
02.3.2.	Contingencies					\$206,500	
02.3.	Relocation Total:						\$4,619,750

GULFPORT HARBOR, MISSISSIPPI
Cost Estimate for 12.0. Account Code

NON-FEDERAL

ACCOUNT CODE	ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	CONTINGENCY In acct. 12.0.2.2.	TOTAL PROJECT COST
12.0.2.	Dredging Berthing Areas	154,699	C.Y.	0.58	\$90,000	\$18,000	\$108,000
	Subtotal, Construction Costs:				\$90,000		
12.0.2.2	Contingencies					\$18,000	
12.0.2.	Dredging Total:						\$108,000

03-Aug-89

PROJECT: Gulfport Harbor, MS
ECONOMY CODE: 02.C.D. Cemeteries, Utilities, and Structures

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NON-FEDERAL COST ESTIMATE SUMMARY FOR REAL ESTATE REPORT

03-Aug-89

PROJECT: Gulfport Harbor, MS

ACCOUNT CODE: 01.C.2. Final LCA

Budget Category -->	(1)	(1)	(5)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<----- IN HOUSE ----->											
Schedule	{-- Direct Labor --}<----- Overhead ----->											
Organization	Workyear	Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Payments	Contract	<--- OUTSIDE POA --->			
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	(A/E, R, Con)	Corps	Other	Government	Other	Estimate
										for Account	Account	Cost for
										01.C.2.	01.C.2.	01.C.2.
NON-FEDERAL												
Local Sponsor	0	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200	\$120	\$1,320
	0	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200	\$120	\$1,320
Totals	0	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200	\$120	\$1,320

NON-FEDERAL COST ESTIMATE SUMMARY FOR REAL ESTATE REPORT

PROJECT: Gulfport Harbor, MS
 ACCOUNT CODE: 01.C.3. Negotiate LCA
 03-Aug-89

Budget Category -->	(1)	(11)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<----->			IM HOUSE		<----->		OUTSIDE POA				
Schedule	(-- Direct Labor --)		Overhead		Other	Direct Proj	Contract	-- Government		Total Estimate	Contingency	Total
Organization	Workyear Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Payments	Other	Other		for Account	for Account	Cost for
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	(A/E, P, Con)	Corps	Agencies	01.C.3.	01.C.3.	01.C.3.
NON-FEDERAL												
Local Sponsor	0	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400
	0	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400
Totals	0	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400

03-Aug-89

PROJECT:
ACCOUNT CODE:

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NON-FEDERAL COST ESTIMATE SUMMARY FOR REAL ESTATE EFFORT

PROJECT: Gulfport Harbor, MS
 ACCOUNT CODE: 01.D.3. Title Evidence
 03-Aug-89

Budget Category -->	(1)	(1)	(5)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget Schedule	<----->											
	IN HOUSE											
	----->											
	Tech/Indirect General Admin Direct Charge Facility Ch Payments Other Government -->											
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
WOM-FEDERAL	0	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000	\$300	\$3,300
Local Sponsor	0	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000	\$300	\$3,300
Totals	0	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000	\$300	\$3,300

WOW-FEDERAL COST ESTIMATE SUMMARY FOR REAL ESTATE REPORT

03-Aug-89

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 01.D.4 Negotiations and Closing

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<-----> IN HCUSG ----->											
Schedule	(-- Direct Labor --)(<-----> Overhead ----->)											
Organization	Estimate	Cost	Tech/Indirect	General Admin	Direct Charge	Facility Ch	Contract	OUTSIDE POA	Government	Estimate	Contingency	Total
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
	0	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400
WOW-FEDERAL	-----											
Local Sponsor	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400
Totals	0	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$400	\$4,400

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 01.P.2. Contract Appraisals

Gulfport Harbor, MS
01.P.2. Contract App

03-Aug-89

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<--	Direct Labor -->	Tech/Indirect Cost Estimate	IM MOUSE Overhead Estimate	Other Direct Charge Facility Ch Estimate	Direct Proj Contract Payments Estimate	OUTSIDE FOA Other Government Other Corps Agencies	Total Contingency for Account	Total Contingency for Account	Total Contingency for Account	Total Contingency for Account	Total Contingency for Account
Schedule												
Organization												
NON-FEDERAL												
Local sponsor	0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$100	\$1,100
	0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$100	\$1,100
Totals	0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$100	\$1,100

NON-FEDERAL COST ESTIMATE SUMMARY FOR REAL ESTATE EFFORT

PROJECT: Gulfport Harbor, MS
 ACCOUNT CODES: 01.K. Temporary Permits

03-Aug-89

Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	----->											
Schedule	----->											
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NON-FEDERAL COST ESTIMATE SUMMARY FOR ENGINEERING AND DESIGN EFFORT

PROJECT:	Gulfport Harbor, MS	03-Aug-89										
ACCOUNT CODE:	30.M.B. Final Design											
Budget Category -->	(1)	(1)	(9)	(10)	(2-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	<-----> IM HOUSE											
Schedule	<-----> Overhead											
Organization	<-----> Tech/Indirect General Admin Direct Charge Facility Ch Payments Other Other for Account Account											
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.	30.M.B.

Local Sponsor	0	\$39,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,000	\$0	\$39,000
Chevron Pipeline	0	\$39,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,000	\$0	\$39,000

Totals	0	\$39,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,000	\$0	\$39,000

15-NOV-69

PROJECT: Gulfport Harbor, MS
ACCOUNT CODE: 31.2. Inspection and Quality Assurance

Culport Harbor, MS

31.8. Inspection and Quality Assurance

Budget Category -->	(1)	(2)	(9)	(10)	(12-4)	(5)	(6)	(7)	(8)	(11)	(12)	(13)
From Org Budget	-- Direct Labor -->	Overhead	Estimate	General Admin	Direct Charge Facility Ch	Contract	<-- Government -->	Other	Other Agencies	Total Estimate	Total Contingency for Account	Total Cost for Account
Schedule	Yearly Cost	Tech/Indirect	Estimate	Estimate	Estimate	Payments				for Account	Account	Account
Organization	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate (A/B,C,D,Con)				31.8.	31.8.	31.8.

Local sponsor

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